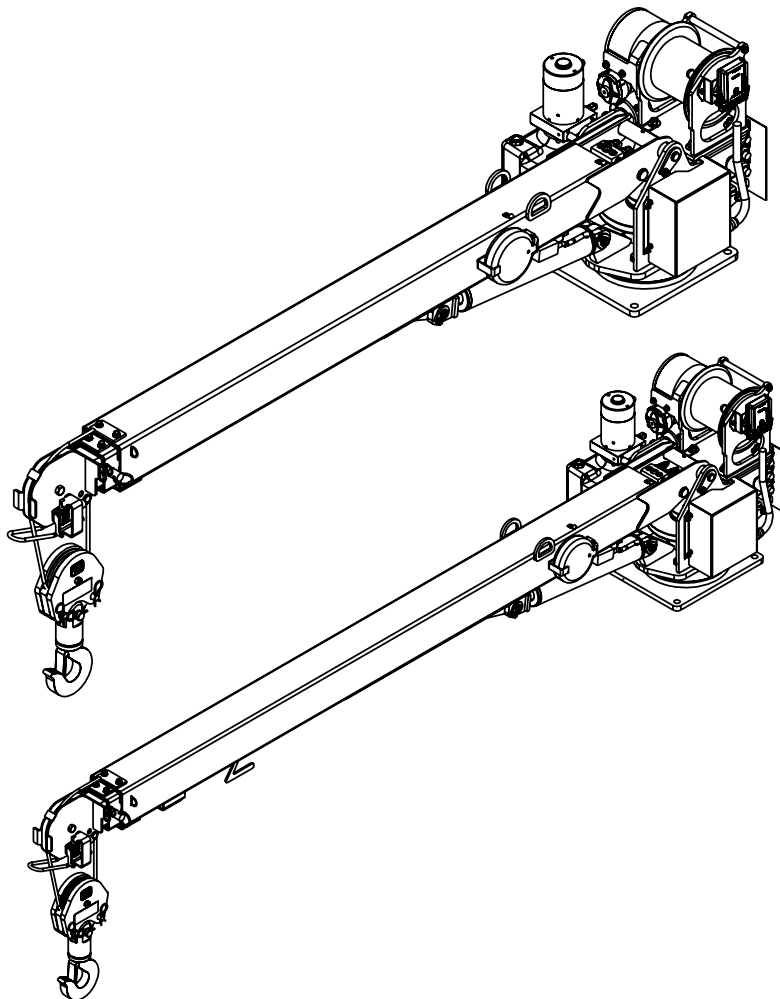




OWNER'S MANUAL EHC-4 WIRELESS



990800043-0323-A

Phone: 1-800-777-2760
Fax: (918) 269-6688

<http://www.autocrane.com>
actechsupport@autocrane.com

4707 N. Mingo Rd.
Tulsa, OK 74117-5904

Product Registration

Thank you for purchasing an Auto Crane® product and taking a few moments to register it online at <https://www.autocrane.com/product-registration/>. Your registration helps us keep you up to date on product information and gives you one of the strongest manufacturer’s limited warranties available.

By completing the product registration, you may be eligible for valuable supplemental coverage under Auto Crane’s Limited Warranty. For more information and a list of eligible products, visit our Warranty page found at <https://www.autocrane.com/warranty/>.

Before You Register

What do I need to get started?

- We’ll ask for:
- The product model and serial number for each product you purchased
 - Your contact information so we can send confirmation of your registration and communicate product bulletins
 - The date you purchased the product, date of installation or in-service (e.g. copy of bill of sale)
 - Truck VIN (if applicable)
 - The name, address and phone number for the dealer who sold and installed your equipment

NOTE: Much of this information will be on the invoice provided by your dealer. If you need help, please contact your installing dealer.

At the time of publishing this manual is accurate to the best of our knowledge. Auto Crane reserves the right to change any or all items, components and parts, necessary for any reason. This right does not obligate Auto Crane to immediately update the manual. If in doubt, please call your local Auto Crane distributor for the most up-to-date information. Auto Crane Company issues a limited warranty with each unit sold.
See warranty pages at the end of the manual.

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Safety Tips and Precautions



Indicates a hazardous situation which, if not avoided, will result in death or serious injury.



Indicates a hazardous situation which, if not avoided, could result in death or serious injury.



Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



Indicates information considered important, but not hazard-related.



Federal law (49 CFR part 571) requires that the Final Stage Manufacturer of a vehicle certify that the vehicle complies with all applicable federal regulations. Any modifications performed on the vehicle prior to the final state are also considered intermediate stage manufacturing and must be certified as to compliance. The installer of this crane and body is considered one of the manufacturers of the vehicle. As such a manufacturer, the installer is responsible for compliance with all applicable federal and state regulations and is required to certify that the vehicle is compliant.



It is the further responsibility of the installer to comply with the OSHA Truck Crane Stability Requirements as specified by 29 CFR part 1910.180 (C) (1). In applications, where the rotation of the load is hazardous, a tag or restraint line should be used, (ref. OSHA 1910.180(h)(3)(xvi)). To reduce the potential for the load to rotate or rope twist, operate at minimal boom angles and extension.



This crane is designed for vertical lifts only. Do not attempt to lift or drag a load from the side! The boom can fail far below its rated capacity.



Do not weld, modify, or use unauthorized components on any Auto Crane unit as failure of the crane may occur. This will void any warranty or liability.



Failure to correctly plumb and wire crane can cause inadvertent operation and damage to crane and/or personnel!



Auto Crane Company remote controlled cranes are not designed or intended for use for any applications involving the lifting or moving of personnel when not using authorized Auto Crane Company personnel attachments. Any such unauthorized use is considered to be improper and the seller shall not be responsible for any claims arising from such use. There is no implied warranty or responsibility for such uses.

NOTICE

Keep this manual with the crane at all times.

Auto Crane products are designed to provide many years of safe, trouble-free, dependable service when properly used and maintained.

To assist you in obtaining the best service from your crane and to avoid untimely crane and/or vehicle failure, this manual provides proper operating and service instructions. It is specifically recommended that all operating and service personnel consider this manual as mandatory material for reading and study before operating or servicing Auto Crane products. It is highly recommended that crane owners, equipment managers, and supervisors also read this manual.

In addition, the overall dimensions, rotation, and turning radius of the crane are included on the General Dimension Drawing.

Remember, the crane adds weight to the vehicle which may change the driving and riding characteristics of the vehicle unless the appropriate overload spring(s) are installed. The payload of the vehicle is reduced by the weight of the crane. The operator should exercise care when loading the vehicle. Distributing the payload on the vehicle evenly will greatly improve the driving and riding characteristics of the vehicle.

The cranes are electrically powered by a 12-volt DC electrical system. The use of a maintenance-free battery is not recommended on any Auto Crane product. The recommended alternator and battery that will give the longest life with the most useful duty cycle is a 60-amp alternator with a 500 cold cranking amp battery. These specifications should be considered minimum.

It has always been Auto Crane Company policy to handle all warranty claims we receive as promptly as possible. If a warranty claim involves discrepant material or workmanship, Auto Crane will take immediate corrective action. It is understandable that Auto Crane Company cannot assume responsibility of liability when it is obvious that our products have been abused, misused, overloaded or otherwise damaged by inexperienced persons trying to operate the equipment without reading the manual.

Auto Crane will not assume responsibility or liability for any modifications or changes made to unit, or installation of component parts without authorization.

Auto Crane maintains a strong distributor network and a knowledgeable Customer Service Department. In most cases, an equipment problem is solved via phone conversation with our customer service department. This department also has the ability to bring in a local distributor, regional sales manager, or factory serviceman to help determine the solution to an equipment problem.

Auto Crane Company’s extensive Research and Development Program allow our customers to use the best equipment on the market. Our engineering staff and knowledgeable salespeople are always available to our customers in solving crane and service body application problems. When in doubt, call the Auto Crane factory.

Should you require any assistance not given in this manual, we recommend that you consult your nearest Auto Crane Distributor. Our distributors sell authorized parts and have service departments that can solve almost any needed repair. This manual does not cover all maintenance, operating, or repair instructions pertinent to all possible situations.

If you require additional information, please contact the Auto Crane Company at the following telephone number: 1-800-777-2760

Dimensions

- Width: 21.75 in. (.55 m)
- Height: 26.88 in. (.68 m)
- Length (16’ Boom): 9 ft 7 in. (2.92 m), stored length.
- Length (20’ Boom): 11 ft 7 in. (3.53 m), stored length.
- Weight (16’ Boom): 960 lb (435 kg)
- Weight (20’ Boom): 1040 lb (472 kg)

Rating

- Crane Capacity: 4,000 lb
 - Double Line: 4,000 lb maximum
 - Single Line: 2,000 lbs maximum
- 16,000 ft-lb (2.21 ton-m)
- Ft-lb = horizontal distance from center line of rotation to free hanging weight (feet) x amount of weight (pounds).

Cable

- 80 ft. (24.4 m) of 5/16” in. (8 mm) diameter aircraft quality cable. This cable has a single line breaking strength of 9,800 lb (4,445 kg).

Line Speed

- 20 ft. per minute (single line, no load)

Chassis and Mounting Requirements

- 10,500 lb (4,763 kg) GVWR minimum
- 210,600 in-lb Resistive Bending Moment (RBM)
- 3/4”, Grade 8-UNF Bolts. Tightened to 315 ft-lb
- 9” Mounting hole to run electrical lines to the crane from the body

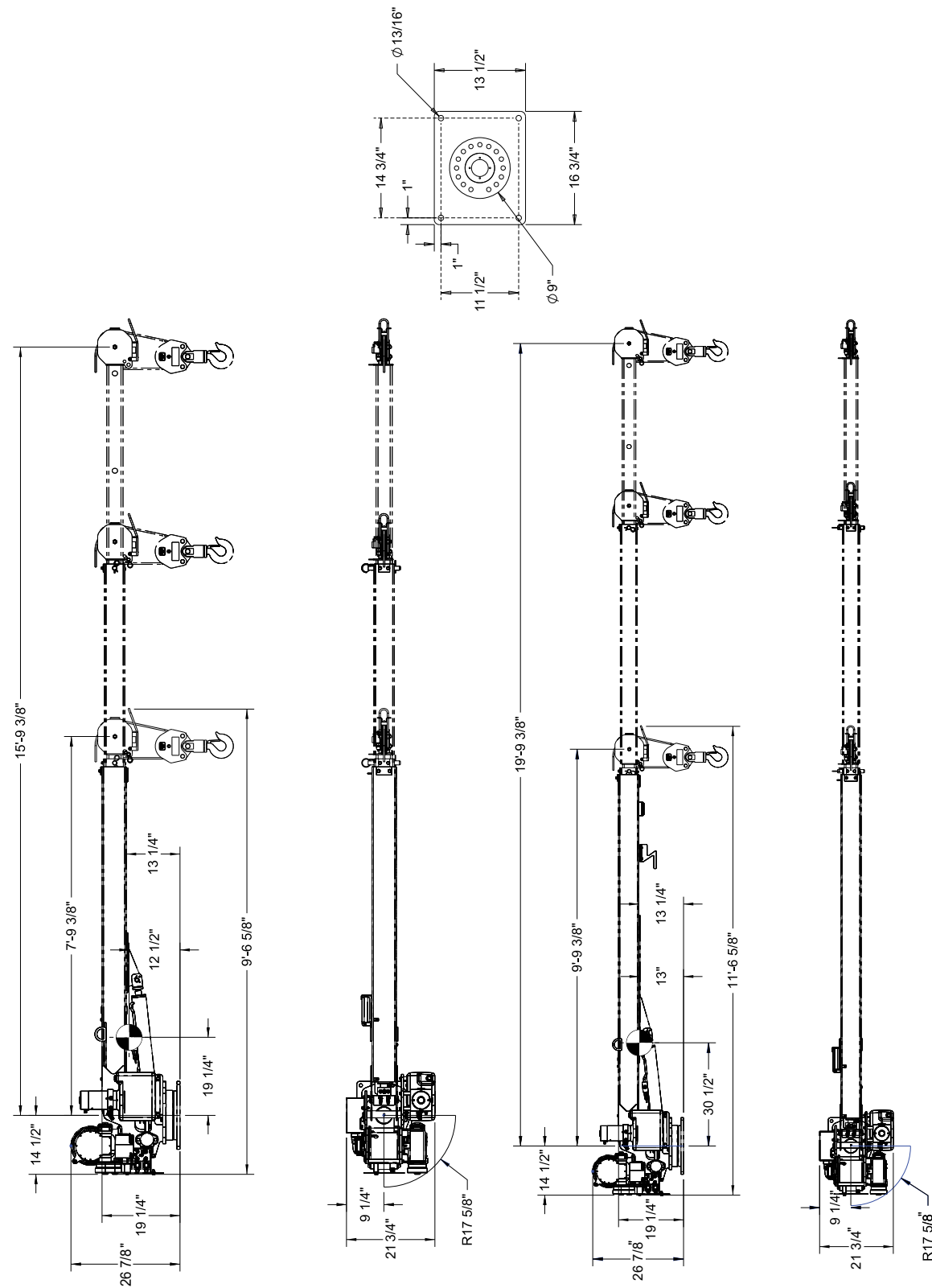
Electrical System Requirements

- Voltage: 12 VDC
- Alternator: 165 amps minimum
- Battery: 130 minute reserve capacity minimum. Maintenance Type battery
 - An auxiliary battery may be installed to augment battery capacity.

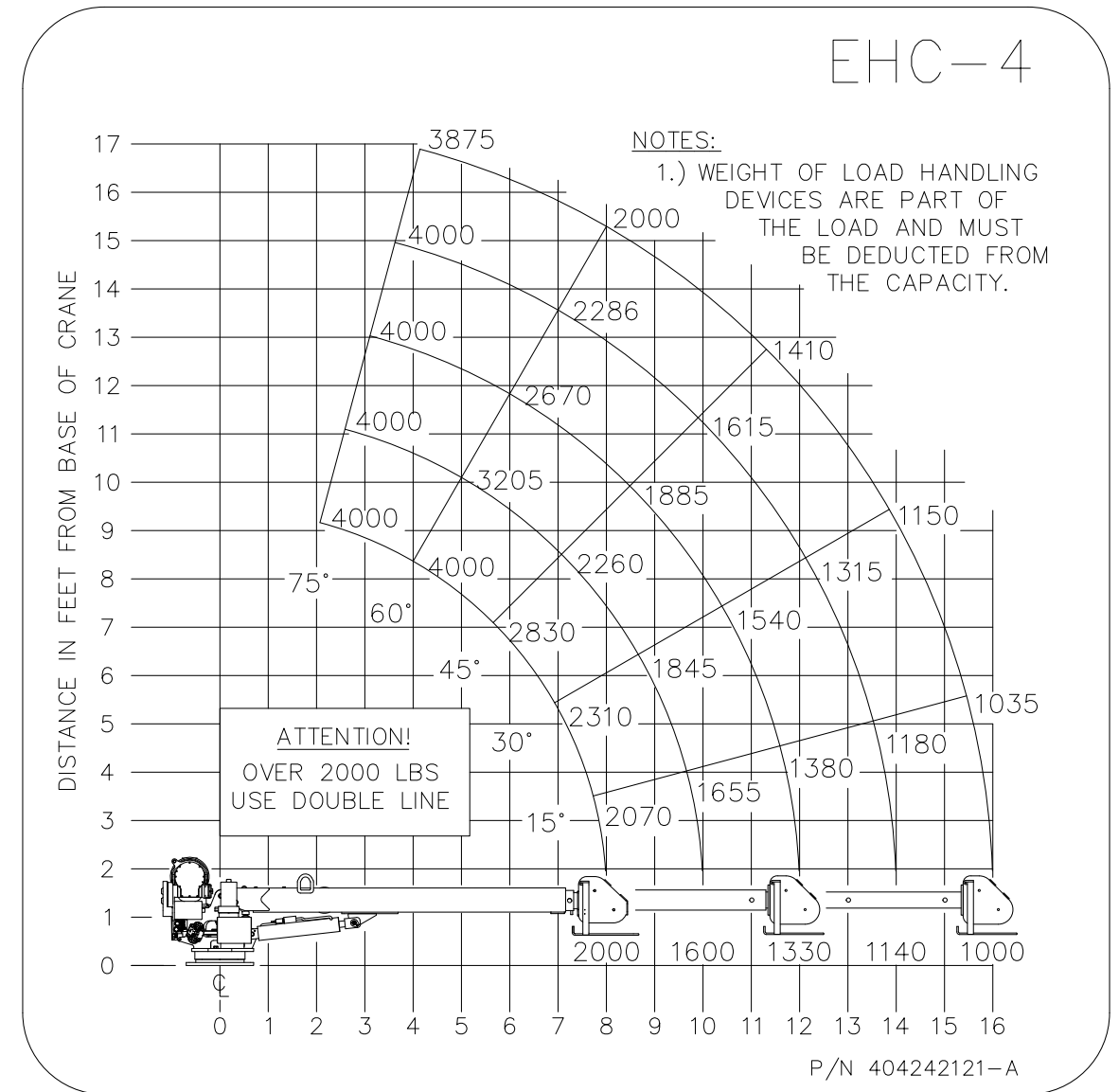
Rotation

- 360° continuous

General Dimensions



Load Chart - P/N 404242121

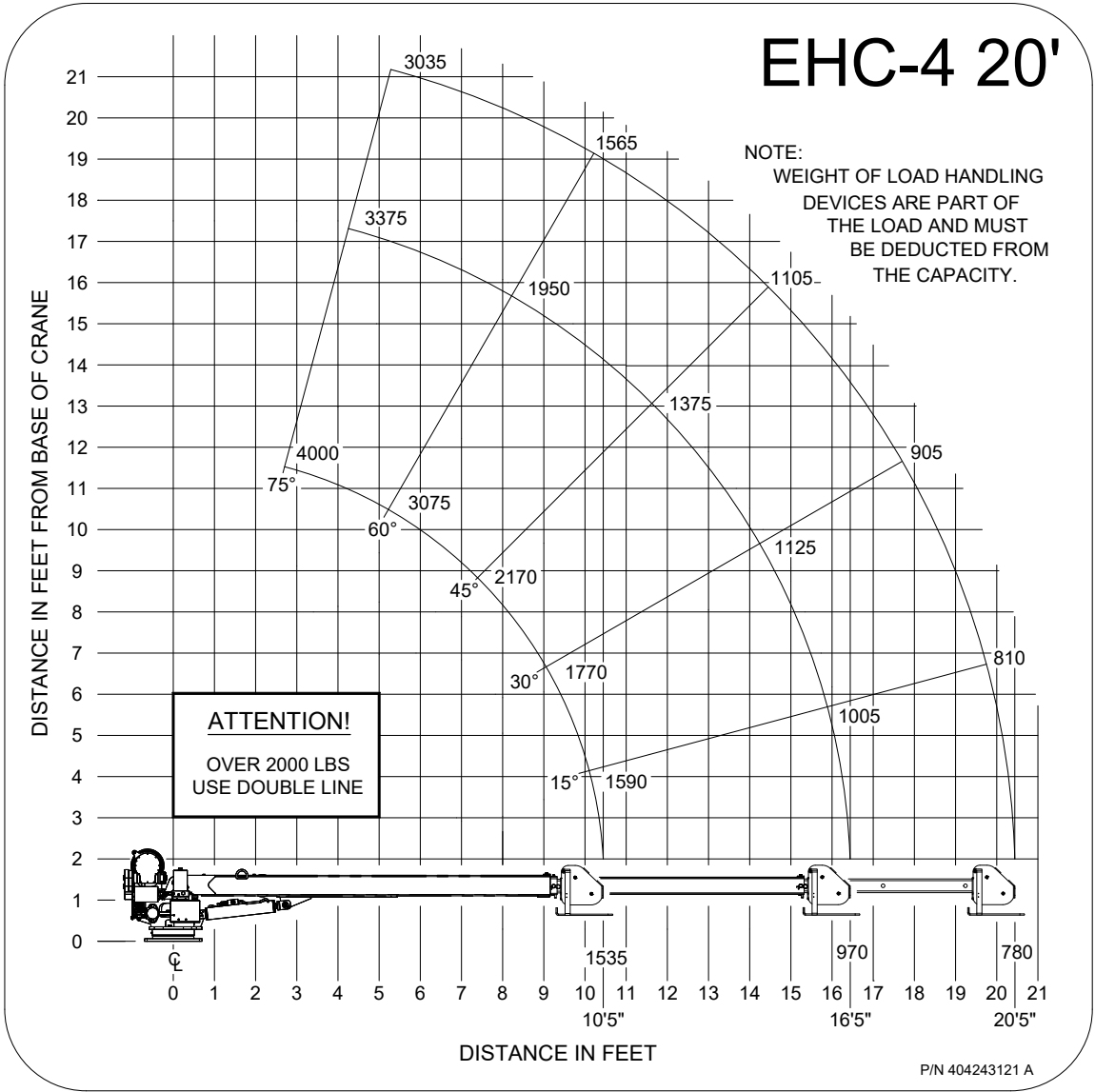


⚠ WARNING

All load ratings are based on crane capacity, not vehicle stability. When lifting a heavy load, the weight can create enough tipping moment to overturn the vehicle. DO NOT USE the overload shutdown device to determine maximum rated loads.

⚠ WARNING

Always comply with load chart capacities. Weight of load handling devices (i.e. traveling block, hook, clevis, etc.) are part of the load and must be deducted from the crane capacity.



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THIS IS ONLY AN OVERVIEW OF ALL APPLICABLE QUALIFICATION REQUIREMENTS. REFERENCE ASME B30.5 AND OSHA 1910.180 FOR COMPLETE QUALIFICATION REQUIREMENTS.

Operators

1. Crane operation shall be limited to personnel with the following minimum qualifications:
 - A. Designated persons.
 - B. Trainees under the direct supervision of a designated person.
 - C. Maintenance and test personnel (when it is necessary in the performance of their duties).
 - D. Inspectors (crane).
2. No one other than the personnel specified above shall enter the operating area of a crane with the exception of persons such as oilers, supervisors, and those specified persons authorized by supervisors whose duties require them to do so, and then only in the performance of their duties and with the knowledge of the operator or other persons.

Qualifications For Operators

1. Operators shall be required by the employer to pass a practical operating examination.
2. Qualifications shall be limited to the specific type of equipment for which examined.
3. Operators and operator trainees shall meet the following physical qualifications:
 - A. Vision of at least 20/30 Snellen in one eye and 20/50 in the other, with or without corrective lenses.
 - B. Ability to distinguish colors, regardless of position, if color differentiation is required for operation.
 - C. Adequate hearing with or without hearing aid for the specific operation.
4. Evidence of physical defects or emotional instability, which render a hazard to operator or others, which in the opinion of the examiner could interfere with the operator's performance, may be sufficient cause for disqualification. In such cases, specialized clinical or medical judgment and tests may be required.
5. Evidence that operator is subject to seizures or loss of physical control shall be sufficient reason for disqualification. Specialized medical tests may be required to determine these conditions.
6. Operators and operator trainees should have normal depth perception, coordination, and no tendencies to dizziness or similar undesirable characteristics.
7. In addition to the above listed requirements, the operator shall:
 - A. Demonstrate the ability to comprehend and interpret all labels, operator's manuals, safety codes, and other information pertinent to correct crane operation.
 - B. Possess the knowledge of emergency procedures and be able to implement them.
 - C. Demonstrate to the employer the ability to operate the specific type of equipment.
 - D. Be familiar with the applicable safety regulations.
 - E. Understand the operating procedures as outlined by the Auto Crane.
 - F. Be thoroughly familiar with the crane and its control functions.

Conduct Of Operators

1. The operator shall not engage in any practice which will divert his attention while operating the crane.
2. Each operator shall be responsible for those operations under the operator's direct control. Whenever there is any doubt as to safety, the operator shall consult with the supervisor before handling the loads.
3. The operator should not leave a suspended load unattended unless specific precautions have been instituted and are in place.
4. If there is a warning sign on the switch or engine starting controls, the operator shall not close the

Qualifications and Operating Practices

- switch or start the engine until the warning sign has been removed by the appointed person.
- Before closing the switch or starting the engine, the operator shall see that all controls are in the "OFF" or neutral position and all personnel are in the clear.
 - If power fails during operation, the operator shall:
 - Move power controls to the "OFF" or neutral position.
 - Land the suspended load and boom, if practical.
 - The operator shall be familiar with the equipment and its proper care. If adjustments or repairs are necessary, the operator shall report the same promptly to the appointed person and shall also notify the next operator.
 - At the start of each shift, the operator shall test all controls. If any controls do not operate properly, they shall be adjusted or repaired before operations are begun.
 - Stabilizers shall be visible to the operator while extending or setting unless a signal person assists operator.

Operating Practices/Handling The Load



Never use two cranes to support a load too large for either crane.

- Size of load.
 - No crane shall be loaded beyond the rated load except for test purposes.
 - The load to be lifted is to be within the rated load of the crane and its existing configuration.
 - Know the weight of the rigging and deduct from the load rating to prevent the crane.
 - When loads that are not accurately known are to be lifted, the person responsible for the job shall determine the weight of the load does not exceed the crane rated load at the radius at which the load is to be lifted.
- Attaching the load.
 - Ensure the load is properly attached to the hook by means of slings or other devices of sufficient capacity.
 - Ensure the vehicle is in a level position when loading or unloading.
 - Hoist rope shall not be wrapped around the load.
- The operator shall determine that:
 - The crane is level and, where necessary, the vehicle/carrier is blocked properly.
 - The load is well secured and balanced in the sling or lifting device before it is lifted more than a few inches.
 - Means are provided to hold the vehicle stationary while operating the crane.
 - Before starting to lift, the hook shall be positioned over the load in such a manner as to minimize swinging.
- During lifting care shall be taken that:
 - There is no sudden acceleration or deceleration of the moving load.
 - When rotating the crane, sudden starts and stops shall be avoided. Rotational speed shall be such that the load does not swing out beyond the radius at which it can be controlled.
 - Load, boom or other parts of the crane do not contact any obstruction.
 - Cranes shall not be used for dragging loads sideways.
 - ASME B30.5 recognizes that mobile and locomotive cranes are designed and intended for handling materials and not generally personnel. However, personnel are permitted to ride in an Auto Crane authorized, boom-mounted, personnel platform when used in accordance with the requirements of ASME B30.23 and Auto Crane's instructions. The crane shall not be used for other purposes while handling personnel (Refer to ASME B30.23). Hook attached suspended work platforms (baskets) shall not be used with Auto Crane cranes.

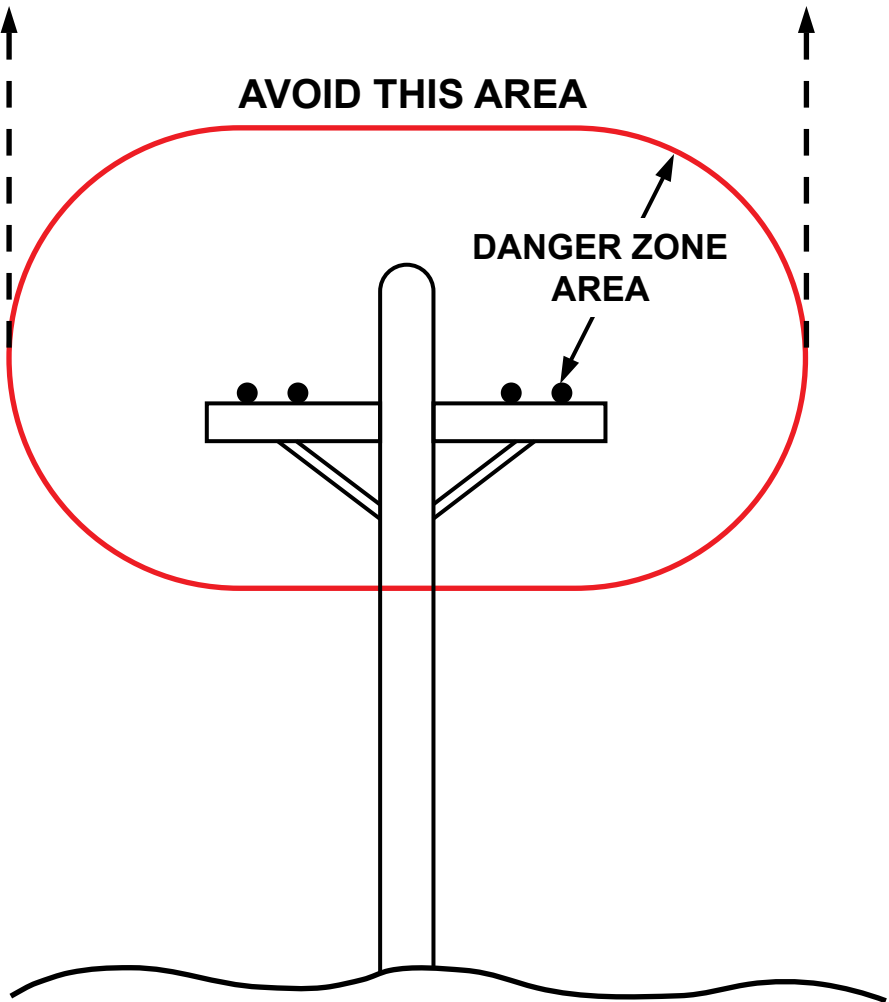
Qualifications and Operating Practices

- The operator should avoid carrying loads over people.
- When the crane is so equipped, the stabilizers shall be fully extended and set. Blocking under stabilizers shall meet the requirements as follows:
 - Sufficient strength to prevent crushing, bending, or shear failure.
 - Of such thickness, width and length as to completely support the stabilizer pad.
 - Firm footing under all tires, or individual stabilizer pads should be level. Where such a footing is not otherwise supplied, timbers, cribbing, or other structural members to distribute the load so as to not exceed allowable bearing capacity or the underlying material should provide it.
- In transit, the boom shall be carried in stowed position.
- The crane shall not be transported with a load on the hook.

Operating Near Electrical Power Lines



Never operate the crane near electrical lines or in the danger zone area.



1. Do not place any part of the crane or load inside the Danger Zone.
- Exceptions:

A. The Danger Zone may be entered after confirmation by an appointed person the electrical distribution and transmission lines are de-energized and visibly grounded at the point work.

B. The Danger Zone may be entered if insulating barriers are erected to prevent physical contact with the lines. These can't be a part of or attached to the crane.
2. For the minimum safe distance between electrical lines and any part of the crane or load (including handling appendages), or while in the transit with the boom stowed, see Safe Operating Distance Table below.
3. Exercise caution when working near overhead lines. They can move horizontally and vertically due to wind, shifting the location of the Danger Zone.
4. Assign a qualified, signal person to observe the clearance and warn the crane operator before approaching the Safe Operating Distance limits.

A. Treat all overhead wires as energized until the person or utility owning the line verifies it is not energized.

B. Exceptions ensuring equivalent protection are allowed, if approved by the administrative or regulatory authority in writing.

C. Install durable signs at the operator's station and on the outside of the crane, warning that

D. electrocution or serious bodily injury may occur if the Safe Operating Distance Table limits are not adhered to.

Preparing The Crane For Operation

Safe Operating Distance for Cranes Near Electrical Lines	
Normal Voltage, kv (Phase to Phase)	Specified Clearance, ft (m)
During Operation	
Up to 50	10 (3)
Over 50 to 200	15 (4.6)
Over 200 to 350	20 (6.1)
Over 350 to 500	25 (7.6)
Over 500 to 750	35 (10.7)
Over 750 to 1,000	45 (13.7)
Over 1,000	Determine specific clearance after consultation with utility owner/operator
During Transit or Travel With No Load and Boom or Mast Lowered	
Up to 0.75	4 (1.2)
Over 0.75 to 50	6 (1.8)
Over 50 to 345	10 (3.1)
Over 345 to 750	16 (4.9)

1. Ensure the manual has been thoroughly read by all crane operating and maintenance personnel, and supervisors.
2. Perform a routine inspection of the crane before operation each day, correcting any defects immediately.
3. At the job site, position the vehicle so the crane can reach the load within the rated capacity (center line of rotation to hoist hook).
4. Keep the vehicle as level as possible during operation.
5. Allow the vehicle engine to warm up before operation.
6. For Auto Crane units using only electric operation:

A. Engage the emergency brake.

B. Leave the ignition on with the transmission in park (or neutral for manual transmissions).

C. Activate any crane power switches.
7. For Auto Crane units using electric and hydraulic operation:

A. Engage the emergency brake.

B. Place the transmission in park (automatic trans.) or neutral (manual trans.).

C. Activate PTO (Power Take Off).

D. Allow sufficient time for the hydraulic fluid to warm up.

E. Set the throttle control to the proper engine speed.
8. For all outrigger usage:

A. Always extend the outriggers from the vehicle to the ground before crane operation.

B. Ensure they are firmly positioned on solid ground.

C. Stand clear of outriggers while being extended.

D. If a curb or other object prevents the outrigger from begin fully extended, shorten the bearing or fulcrum point and reduce the maximum load accordingly.

E. If an outrigger will not reach the ground because of holes or grades, block up the outrigger pad to provide level and firm support to the vehicle.

F. If working in soft ground, use wide pads under the outrigger feet to prevent sinking.

G. Always store the outriggers before transportation.

i. For Auto Crane units with Manual Outriggers:

1. Pull the lock pins to release the jackleg or drop down outrigger. Move to the outermost lock position.

2. Ensure lock pins are reinstalled properly.

3. Lower the Outrigger pad to firm ground and adjust the foot to remove slack.

ii. For Auto Crane units with Hydraulic Outriggers:

1. Shift the diverter valve to the Outrigger position.

2. Extend the Outriggers to their horizontal limit.

3. Extend the Outriggers vertically until they make solid contact with the ground and the truck is approximately level side-to-side.
9. With the Outriggers properly positioned, return the diverter valve to the "Crane" position.
10. Remove the remote control from the cab or storage area. Power the remote control on. Detach the hook from the hook stow.
11. The crane is now ready for operation.

During Operation

- 1. Always boom up before rotating so the boom will clear the boom support.
- 2. Always maintain clearance between the boom crown and the traveling block or hook hoist during boom extension.
- 3. Always observe all relevant safety policies and procedures during crane operation.
- 4. Always use slow and smooth movements with the crane to avoid causing the load to swing like a pendulum.

After Operation

- 1. After completing the lifting operations, return the boom to the stowed position on the boom support.
- 2. Replace remote control to its storage location.
- 3. Return the Outriggers to the stowed position (ensure they are pinned in place or jack legs are returned to the storage compartment).
- 4. Always store the crane in its stowed position for transportation.
- 5. Release the throttle control.
- 6. Press the clutch in (manual trans.).
- 7. Disengage the PTO.
- 8. Deactivate any crane power switches.
- 9. Check vehicle surroundings before moving.
- 10. Record any unusual occurrence(s) during crane operation which may indicate required maintenance or repair.

This section describes the general operation for cranes with the Wireless control system.



Before operating the remote control, read and understand all safety information in this manual, any manual supplements, and any applicable local, state, or federal rules and regulations.



Never drive with a load suspended from the crane.



Ensure personnel and objects are clear of the crane path during operation. Do not move loads over personnel.

General

Radio controlled equipment operates in several directions. Frequently there are other pieces of equipment and personnel in close proximity. The operator must exercise extreme caution at all times.

Only properly trained operators should operate the radio controlled equipment. This includes knowing and following all applicable operating and maintenance manuals, safety procedures, regulatory requirements, and industry standards and codes.

Remote Control Unit

Never mechanically block the switches ON or OFF. When not in use, turn the remote control OFF. Always store the remote control in a secure space when not in use. Store spare remote controls in a secure space and only remove after the current remote control has been turned OFF, taken out of the service area, and secured. Before disposing of batteries, consult local and governmental regulatory requirements for instructions on proper disposal.

Remote Control Initialization

Power to the handheld is available when you twist the mushroom-style Machine Stop button clockwise until it springs UP, but the remote is not yet enabled. The unit does not transmit or receive until it is enabled.

Enable the standard pistol grip remote by operating the TX ON toggle switch UP following Stop button release. Initial toggle switch operation following handheld power-up does not send a command to the base unit.

If a switch is held before the Stop button is released (enable the remote), the red ER LED begins to flash. The handheld will not operate until the condition is remedied.

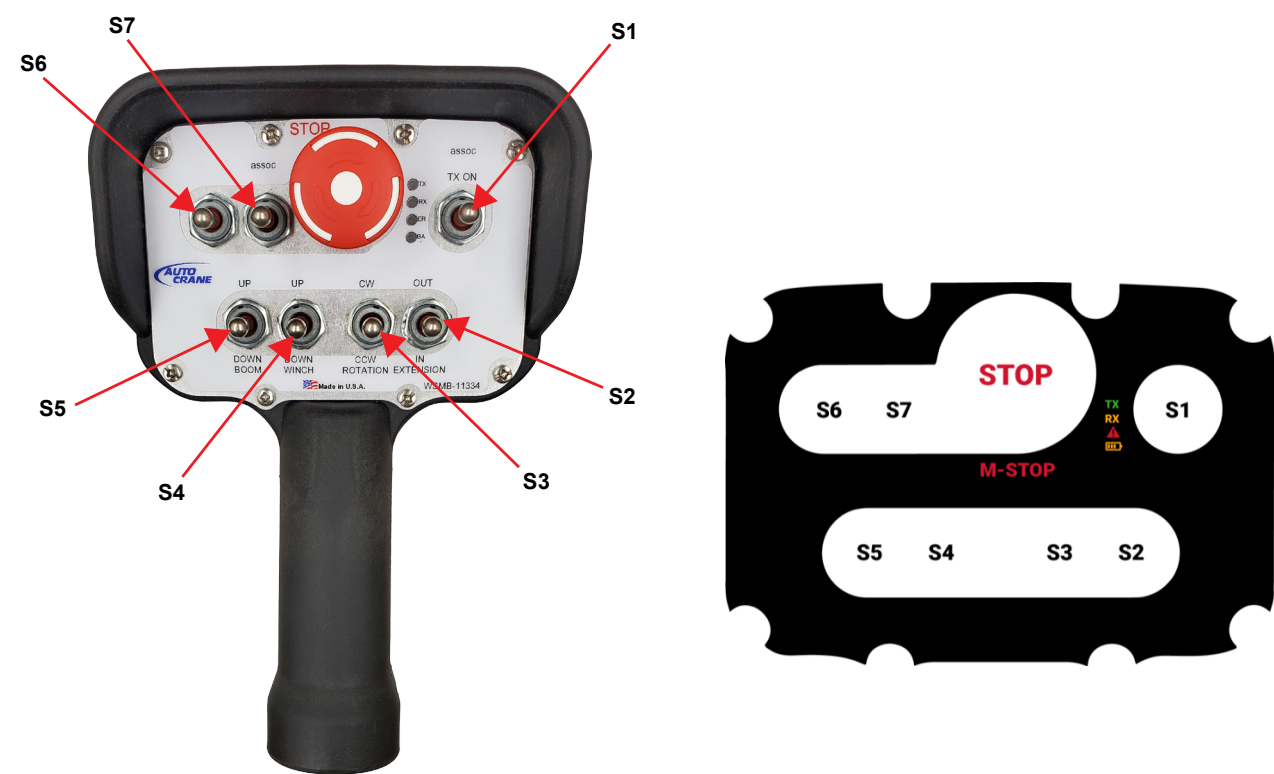
Pre-Operation Test

Before operating the crane, or when a new operator takes control of the equipment, operators should perform the following checks of the equipment before making a lift:

- Test all warning devices.
- Test all functions.
- Test the remote control E-Stop function.

Wireless Operation

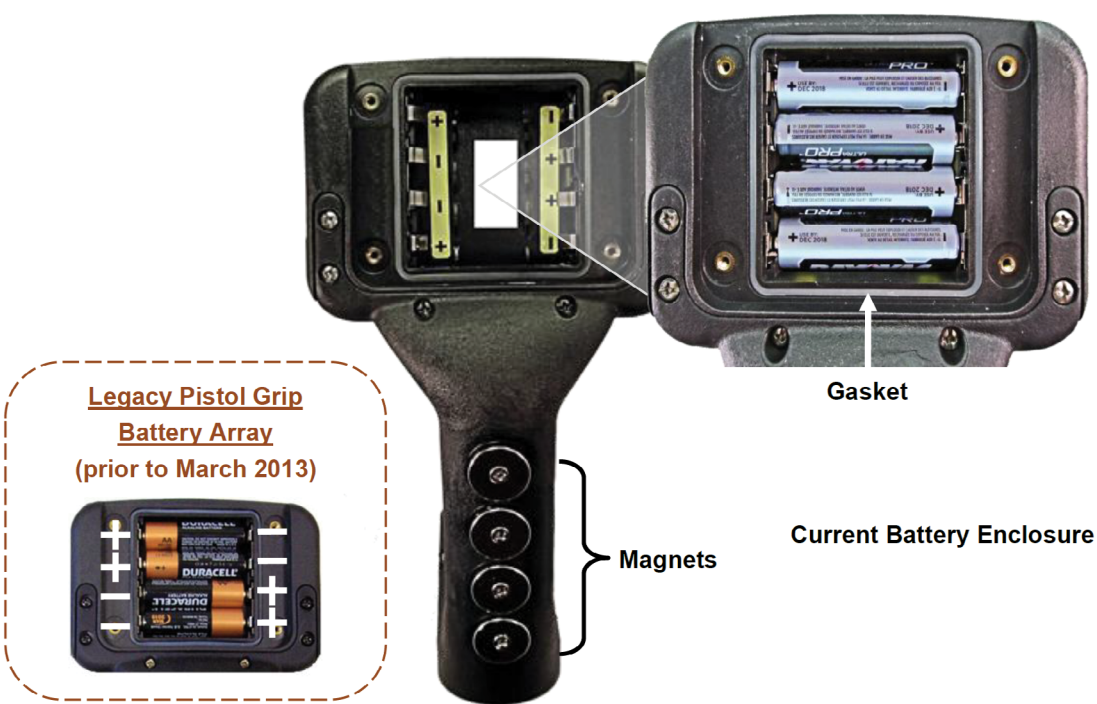
Remote Control Layout



- STOP – Machine Stop, push button IN to power down (OFF). Pull button OUT to power up (ON). When activated, E-Stop terminates all outputs from receiver.
- S1 – TX ON, hold switch UP to activate the handheld remote.
- S2 – Extension IN/OUT, hold this switch UP or DOWN to activate the extension or retraction of the middle or upper booms. This will extend the overall reach of the crane.
- S3 – Rotation CCW/CW, hold this switch UP or DOWN to activate the rotation or slewing mechanism for the crane. This will rotate the crane clockwise or counterclockwise.
- S4 – Winch DOWN/UP, hold this switch UP or DOWN to activate the winch UP/DOWN functions of the crane. This will raise and lower the crane rope.
- S5 – Boom DOWN/UP, hold this switch UP or DOWN to activate the boom UP/DOWN functions of the crane. This will raise and lower the boom angle.
- S6 – ASSOCIATE 1, alternate associate switch. Not used.
- S7 – ASSOCIATE 2, hold switch UP to associate the remote with the receiver in conjunction with S1 up. Hold S7 DOWN to dissociate remote from crane with S1 up.

Wireless Operation

Remote Battery Installation



- Four size AA cell batteries power the remote. When installing batteries, be sure to observe proper polarity – as marked on the inside of the compartment – to avoid damaging the unit. To replace or install batteries:”
1. Loosen the four Phillips battery compartment cover screws on the rear of the remote and lift the cover from the handheld.
 2. Install (or relace with) four AA cell batteries. Observe proper polarity by positioning the batteries as shown.
 3. Replace the compartment cover and tighten the four Phillips screws. Do no over-tighten these screws, but make sure they are tight enough to ensure the gasket provides a proper watertight seal.
 4. The remote will shut down at 1.6 VDC when batteries are low. The “BA” battery amber LED on the remote will indicate low voltage.
 5. There is a four-minute Auto-Shutdown due to inactivity to preserve battery life.

Counterbalance Override Procedures

If, in an emergency situation, it becomes necessary to lower the boom without hydraulic flow available, the counterbalance valve located on the lift cylinder can be used to carefully perform this action.

- 1. Ensure the boom will lower onto a proper support.
- 2. Loosen the lock nut and slowly turn adjustment screw clockwise until the boom begins to slowly lower, counting the number of turns it takes to begin seeing movement.
- 3. Remove hand/arm/fingers from cranes while boom is lowering.
- 4. After boom is lowered, turn adjustment screw counter-clockwise the approximate number of turns made during lowering procedure and tighten lock nut.

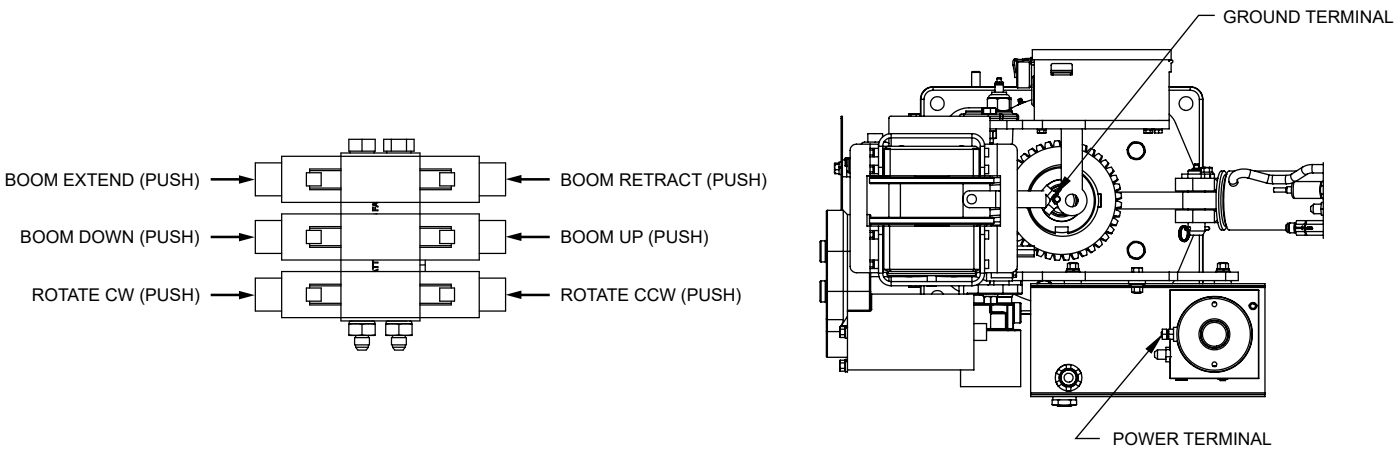
NOTICE

Turning adjustment screw too far will cause valve to come apart on the inside. This condition is not repairable, and the counterbalance valve must be replaced.

WARNING

Do not try to adjust any valves while boom is moving. Doing so may result in personal injury!

Control Valve Override Procedures



CAUTION

Manually overriding crane bypasses all safety features. During operation make sure load does not exceed crane capacity and the traveling block does not come into contact with boom tip.

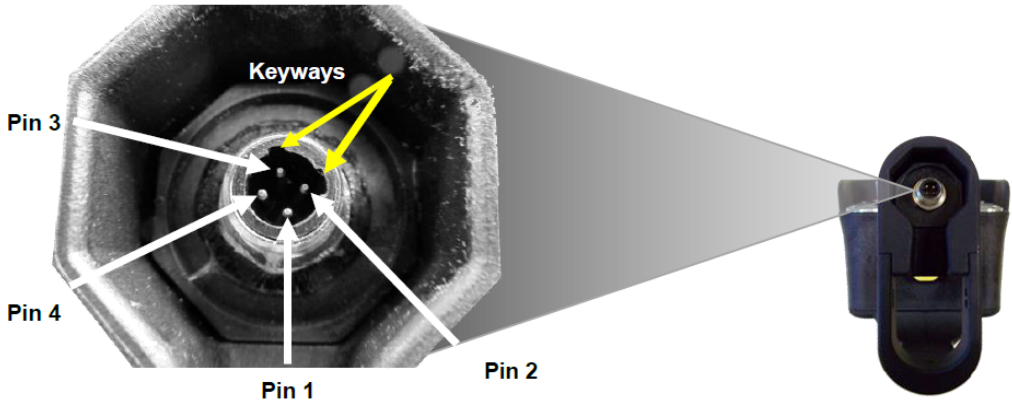
Manual Override Procedures

- 1. Apply 12VDC from battery to pump power terminal.
- 2. Apply ground from battery to grounding connection.
- 3. Select the function desired, then push in override located on the end of the coil using a punch or other small object.

Tether Connection

If a tether connection is wanted (or necessary), connect one end of the cable that is supplied (Part Number: 366823427) to the crane tether connection (located in either the crane box, or on the crane itself), and the other to the tether connection located on the bottom of the remote.

A cap is attached to the handheld remote with a chain which can be unscrewed to allow access to tether connection on the remote. When not in use, the tether cap should be attached to prevent damage. The RF is disabled whenever the tether is attached to the handheld remote and the receiver. When the tether is attached, all controls signals are transmitted via the tether.



NOTICE

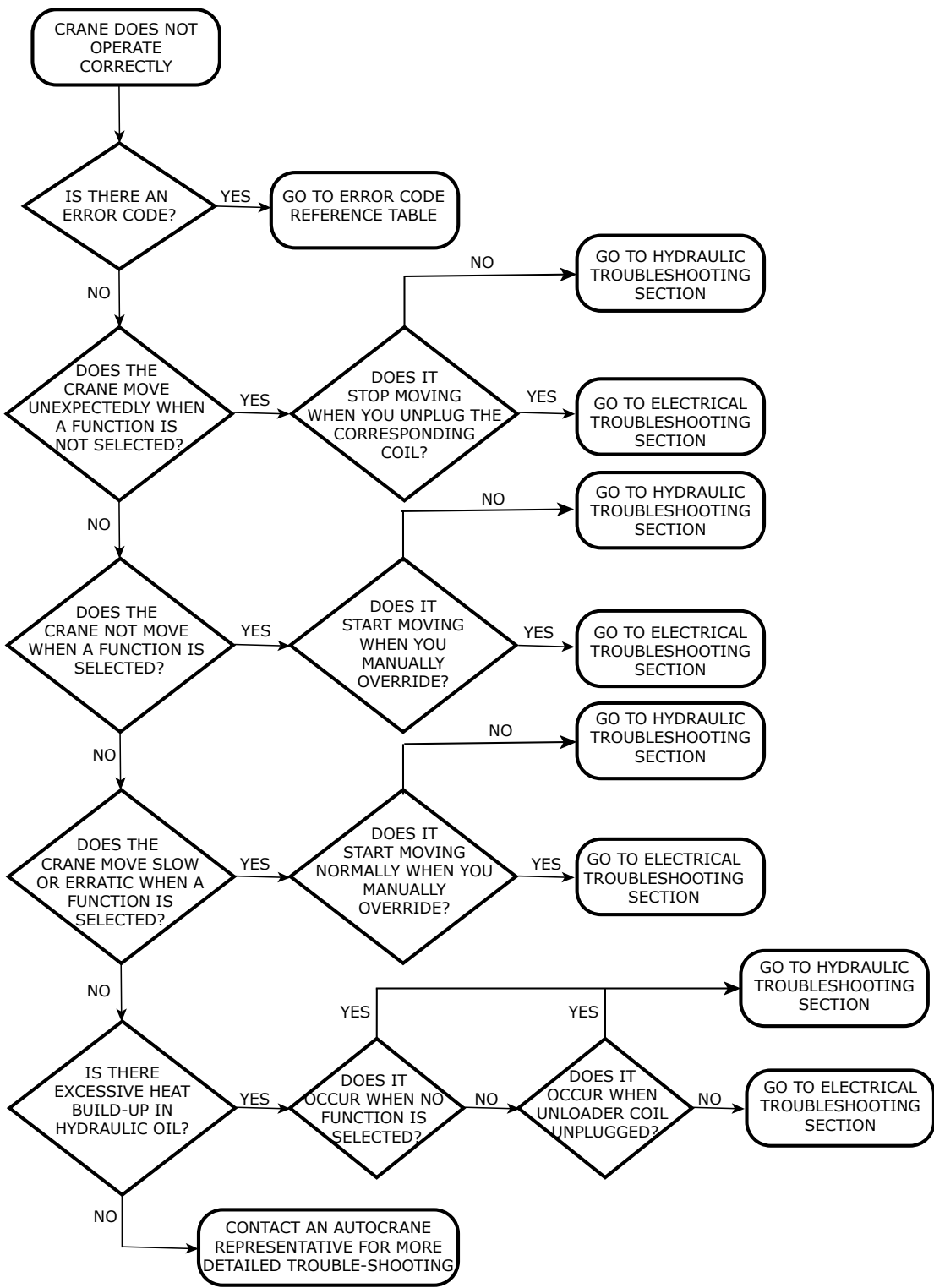
FM radio transmission/reception is disabled when remote is tethered to crane.

Remote Switch Descriptions

SWITCH DIRECTION	FUNCTION	DESCRIPTION
UP	BOOM UP	Moving toggle switch up increases angle of boom relative to ground
DOWN	BOOM DOWN	Moving toggle switch down decreases angle of boom relative to ground
UP	BOOM EXTENSION	Moving toggle switch up increases the overall length of the boom
DOWN	BOOM RETRACTION	Moving toggle switch down decreases the overall length of the boom
UP	WINCH UP	Moving toggle switch up raises the load
DOWN	WINCH DOWN	Moving toggle switch down lowers the load
UP	ROTATE CW	Moving toggle switch up rotates crane clockwise
DOWN	ROTATE CCW	Moving toggle switch down rotates crane counterclockwise
IN	E-STOP ACTIVATED	Pressing red E-Stop in turns the remote off
OUT	E-STOP DEACTIVATED	Twisting clockwise releases the E-Stop
UP	TX ON	Turns remote on, associates with crane (used with S7)
DOWN	TX ON	No function
UP	S7	Associates remote with crane (used with TX ON)
DOWN	S7	Dissociates remote from crane (used with TX ON)
UP	S6	No function
DOWN	S6	No function
TRIGGER COMPRESSED	PROPORTIONALITY INCREASED	Increase speed of crane functions. Not used for non-proportional cranes
TRIGGER DECOMPRESSED	PROPORTIONALITY DECREASED	Decrease speed of crane functions. Not used for non-proportional cranes

Each remote comes with a yellow trigger on the backside of the handle. This yellow trigger is not used for non-proportional cranes. The yellow trigger is only for commonality between models.

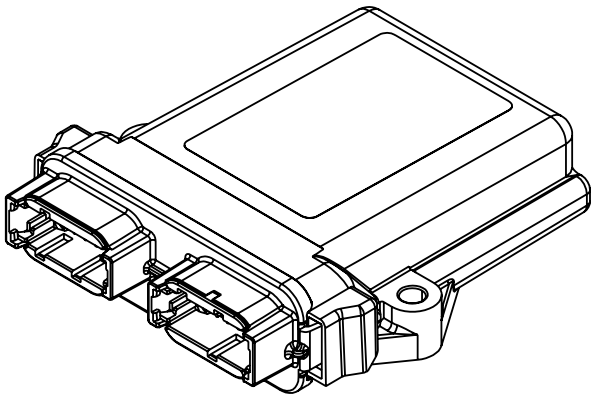
Wireless Remote Troubleshooting Table



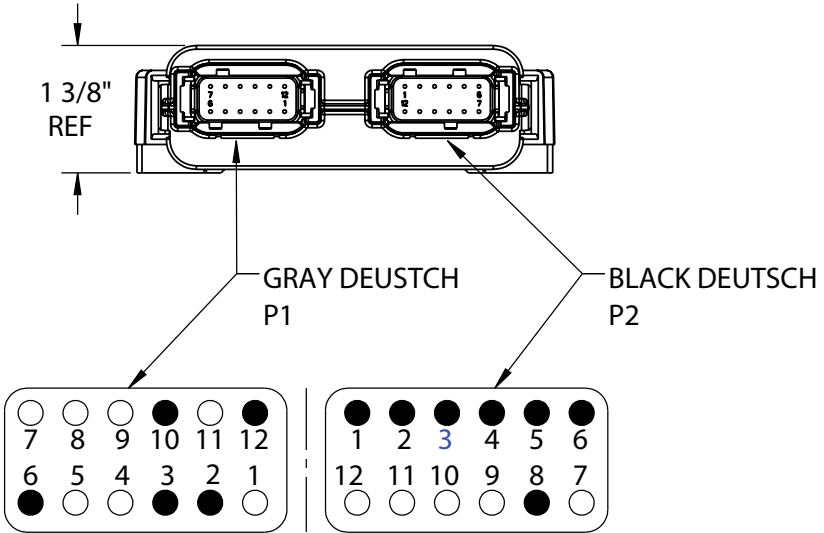
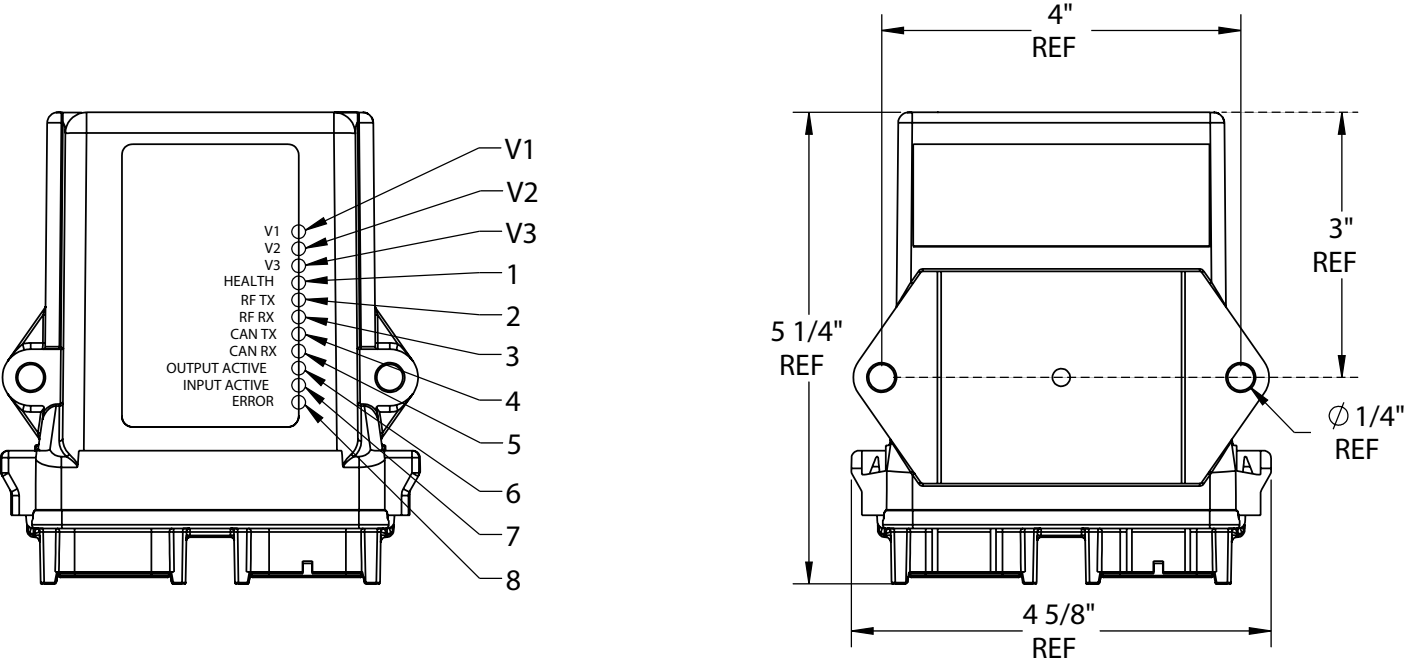
Wireless Remote Troubleshooting Table

PROBLEM	POSSIBLE REASON	ACTION
Remote control will not turn on	Remote control E-Stop and TX ON haven't been used and the remote is off	Turn the remote on by twisting the E-Stop clockwise then moving the TX ON toggle switch UP.
	Dead batteries	Replace batteries.
Remote control will not communicate with the receiver/crane	Remote is not associated to crane	Follow association steps to properly link crane and remote.
	Remote is out of range	Ensure the startup procedure is initiated within 100 ft of the receiver.
Remote will not respond when tethered to crane	Tether is not connected properly or is damaged	Check all pin terminals in the tether and crane wire harness. Remove any debris is present. Replace tether if damaged.
	Crane power is off or low	Ensure crane has power going to the receiver. Receiver needs at least +7VDC.
Crane experiences uncontrolled movement	Toggle switch is broken	Visually inspect remote. Contact Auto Crane
	Crane is "browning out" with input voltage	The inrush, initial amperage draw, when running the crane dips below the minimum operating voltage. Check voltage to receiver. Contact Auto Crane.

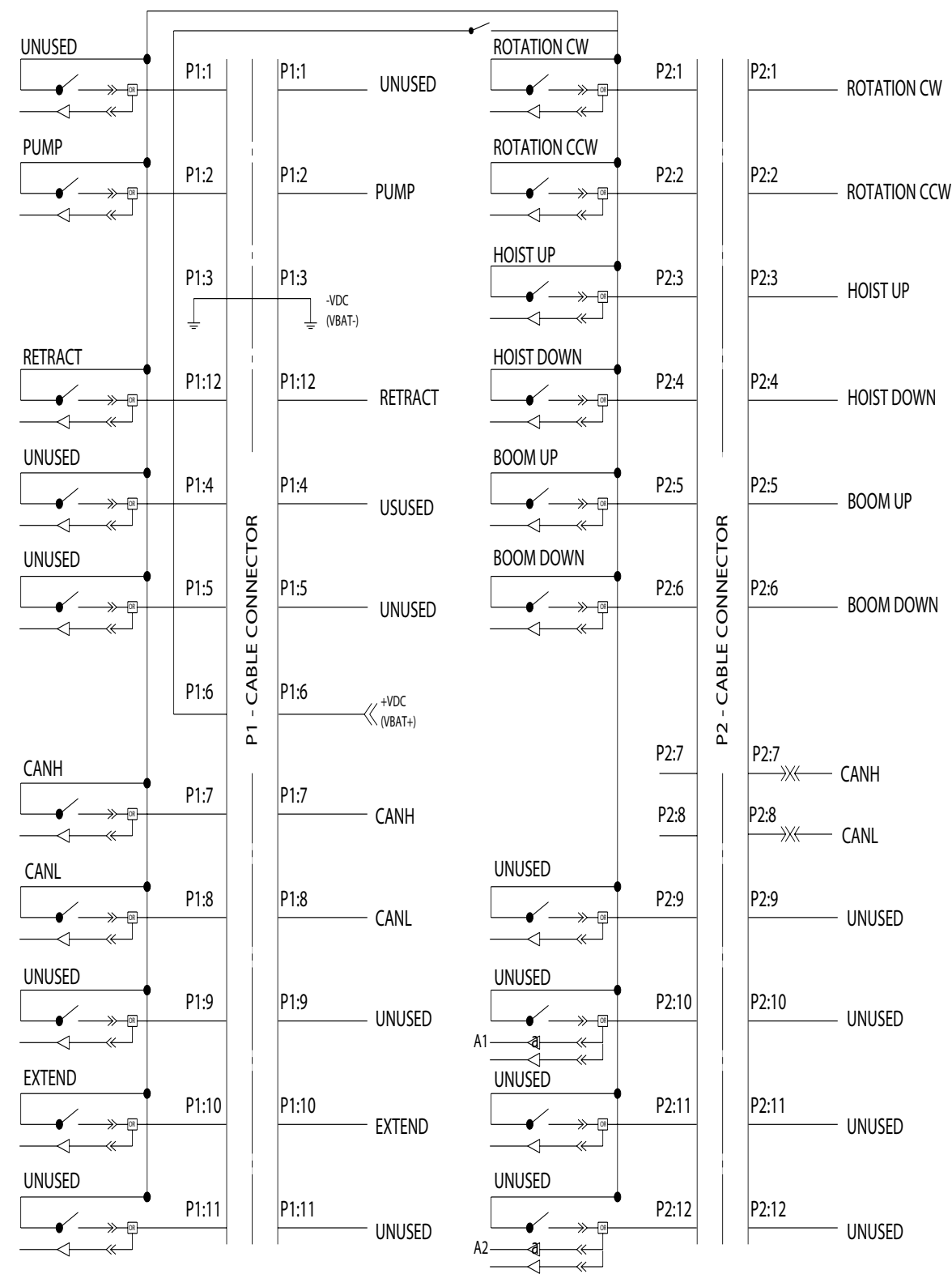
LED Diagnostic Troubleshooting Table



INDICATION	CAUSE	SOLUTION†
Unmarked LED active	Input power polarity is reversed.	Adjust wiring connections to achieve correct polarity.
+V1, +V2, +V3 Power LED not active	Electrical signals not activating the LEDs.	- Is +VDC input power present? - Check input power polarity.
RTX/RRX not active		- Check for obstructions preventing line-of-sight transmission. - Check that the remote unit is active. - Re-associate the remote unit with the base unit.
CTX/CRX not active		- Check CAN wiring. - Check that the remote unit is active. - Re-associate the remote unit to the base unit.
Out LED not active		- Check that the remote unit LEDs are active when the appropriate buttons are pushed. - Check that startup sequence was followed.
ERR LED active	Over-temperature or over-current channel indication.	- Check the outputs for loose wiring, etc. - Active channel current consumption less than 1 A typical. (This is not a problem in cases where less than 1 A draw is a normal condition.)
Health LED blinking rapidly	Indicates an internal problem.	Contact Auto Crane service department.
† – If the recommended solutions do not resolve the issue, contact the Auto Crane service department.		



LED	ACTION	INDICATION
V1	VOLTAGES	VOLTAGES OK WHEN LIT
V2	VOLTAGES	VOLTAGES OK WHEN LIT
V3	VOLTAGES	VOLTAGES OK WHEN LIT
1	HEALTH	BLINKS 1X/SEC WHEN ACTIVE
2	RF TX	FLASHES WHEN ACTIVE
3	RF RX	FLASHES WHEN ACTIVE
4	CAN TX	FLASHES WHEN ACTIVE
5	CAN RX	FLASHES WHEN ACTIVE
6	OUTPUT	BLINKS 1X/SEC WHEN ACTIVE
7	INPUT	BLINKS 1X/SEC WHEN ACTIVE
8	ERROR	SOLID - CHANNELL OUTPUT LOW OR HIGH CURRENT

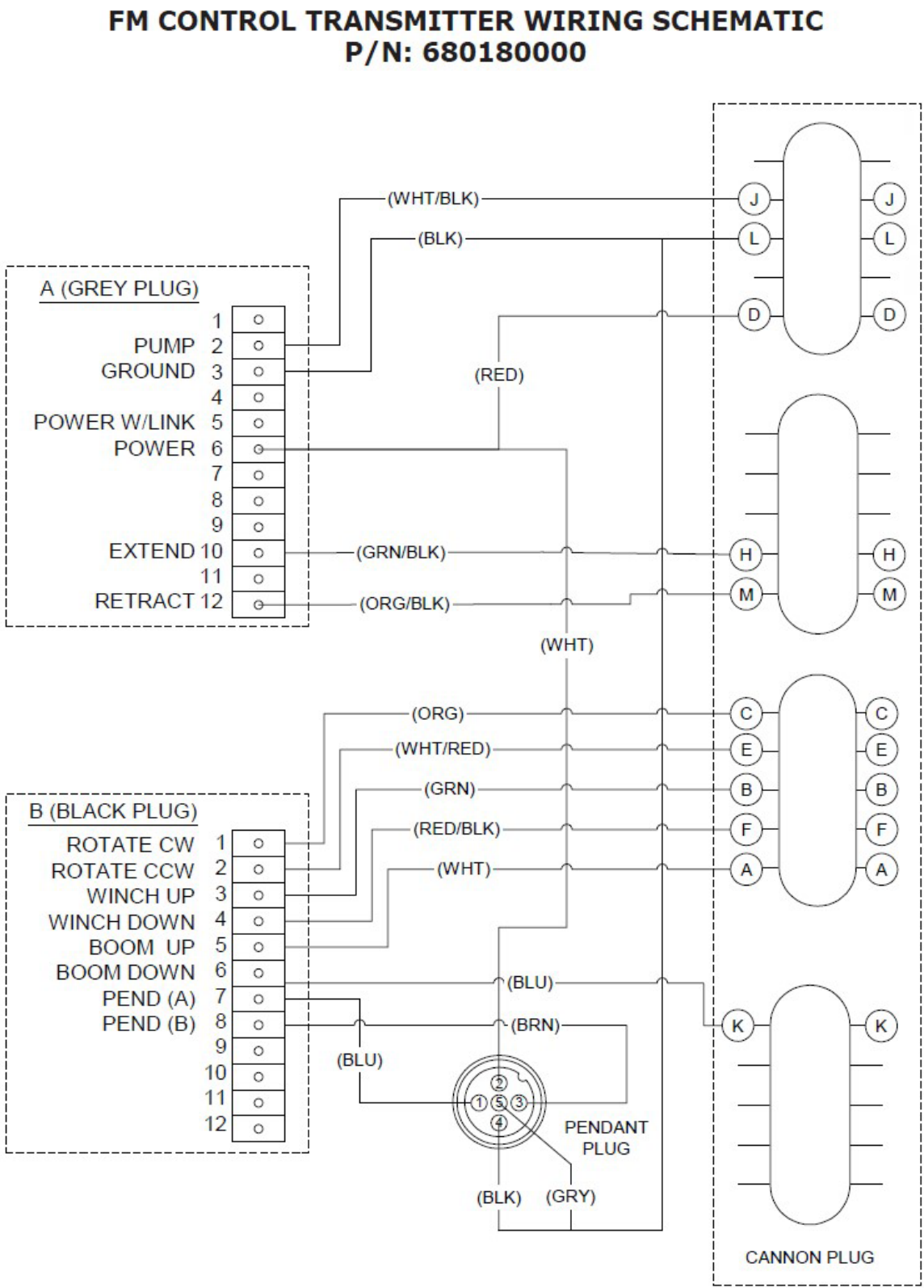


GRAY DEUTSCH CONNECTOR			
P1 PIN	ASSIGNED	P1 PIN	ASSIGNED
P1:1	UNUSED	P1:7	CANH
P1:2	PUMP	P1:8	CANL
P1:3	-VDC UMB COM	P1:9	UNUSED
P1:4	UNUSED	P1:10	EXTEND
P1:5	UNUSED	P1:11	UNUSED
P1:6	+VDC	P1:12	RETRACT
BLACK DEUTSCH CONNECTOR			
P2 PIN	ASSIGNED	P2 PIN	ASSIGNED
P2:1	ROTATION CW	P2:7	CANH
P2:2	ROTATION CCW	P2:8	CANL
P2:3	HOIST UP	P2:9	UNUSED
P2:4	HOIST DOWN	P2:10	UNUSED
P2:5	BOOM UP	P2:11	UNUSED
P2:6	BOOM DOWN	P2:12	UNUSED

Electrical Troubleshooting Table

PROBLEM	POSSIBLE REASON	ACTION
Crane moves unexpectedly	Jammed remote button	Activate E-Stop and see if movement stops. Verify that nothing had depressed the button at the time of movement. If it was not depressed, then replace remote.
	Short in harness	Unplug coil. Trace wire back to receiver. Check connectors.
No function operates on the crane.	Remote turned off/not linked	Verify the power switch is in the on position. Turn remote on. Refer to the associate/dissociate section.
	Crane power turned off/ remote battery low	Most cranes have a toggle switch to turn on crane. This is usually located in the cab or crane box. Check remote batteries
The following functions are inoperable extend, boom down, hoist up.	Anti-2 Block activated	Visually inspect bail weldment and microswitch at the crown if possible. Inspect cord reel wires and connectors.
	Crane overloaded	Reduce load by either retracting, booming up, or hoisting down to return functions.
Any one function is not operable	Cut in wire or bad coil	Switch coil with another coil and check if broken function moves to a different function. Inspect wires to coil. Replace coil or repair wires.
	Toggle switch is bad on remote	Inspect remote switches for damage. Contact Auto Crane.

Electrical Harness Schematic



Hydraulic Troubleshooting Table

ERROR	CAUSE	DIAGNOSTIC	SOLUTION
Crane moves unexpectedly	Jammed valve cartridge	Try to manually override valve. If unable to move stem, cartridge is jammed.	Replace valve cartridge.
	Counterbalance valve set too low (boom up and boom down)	Adjust the counterbalance out to see if movement stops.	Contact Auto Crane for proper adjustment and setting of counterbalance valve. Valve may need to be replaced.
	Contaminant in cartridge	Valve sticks in certain positions.	Clean valve to remove debris. Reference Maintenance section for valve cleaning procedure.
No Function Operates On Crane	Hydraulic tank is low or empty	Visually inspect the hydraulic oil level in the tank.	Fill tank to proper level.
	Vehicle is not running	Verify engine is running.	Start vehicle.
	PTO is not engaged	Verify PTO is engaged.	Engage PTO.
All functions operate slowly	Contamination in cartridges	Visually inspect the cartridges for clogged ports.	Clean valves to remove debris. Reference Maintenance section for valve cleaning procedure.
	Relief valve set too low	Install pressure gauge in control valve block. Fully extend boom to induce full pressure. Verify relief pressure.	Adjust relief valve to proper pressure.
Excessive heat during operation	Crane operated too long	Crane operation is generally designed for intermittent duty (15 minutes loaded / 30 minutes cooldown)	Reduce use of crane to allow oil to cool. If problem persists, add hydraulic oil cooler to system.

Inspection Requirements



Reference ASME B30.5 and OSHA 1910.180 for complete inspection requirements.



All inspections shall be performed by designated personnel only.

Inspection Classification

- 1. Initial Inspection
 - A. Prior to initial use, all new, altered, modified, or extensively repaired cranes shall be inspected by a designated person to ensure compliance with provisions of this standard.
- 2. Regular Inspection
 - A. Inspection procedures for cranes in regular service are divided into two general classifications based upon the intervals at which the inspection should be performed. The intervals, in turn, are dependent upon the nature of the components of the crane and the degree of their exposure to wear, deterioration, or malfunction. The two general classification are herein designated as “frequent” and “periodic” with respective intervals as defined below:
 - i. Frequent Inspection – daily or before each use.
 - ii. Periodic Inspection – one to twelve-month intervals or as specifically recommended by the manufacturer or qualified person.

Frequent Inspection

Inspections should also occur during operation for any deficiencies that might appear between regular inspections. Any deficiencies, such as those listed below, shall be carefully examined and a determination made as to whether they constitute a hazard:

- 1. Inspect control mechanisms for maladjustment that interferes with proper operation.
- 2. Inspect control mechanisms for excessive wear of components and contamination by lubricants or other foreign matter.
- 3. Inspect safety devices for malfunction.
- 4. Visually inspect all hydraulic hoses, particularly those that flex in normal operation of crane functions.
- 5. Inspect hooks and latches for deformation, chemical damage, cracks, and wear.
- 6. Inspect for proper rope reeving.
- 7. Inspect electrical wiring and components for malfunctioning, signs of excessive deterioration, dirt and moisture accumulation.
- 8. Inspect hydraulic system for proper oil level and leaks.
- 9. Inspect tires for recommended inflation pressure, cuts, and loose wheel nuts.
- 10. Inspect connecting pins and locking device for wear damage and loose retaining bolts.
- 11. Inspect rope for gross damage, such as listed below, which may be an immediate hazard.
 - A. Distortion such as kinking, crushing, un-stranding, birdcaging, main strand displacement, or core protrusion. Loss of rope diameter in a short length or unevenness of outer strands should be replaced.
 - B. General corrosion.
 - C. Broken or cut strands.

- D. Use care when inspecting sections of rapid deterioration around flange points, crossover points, and repetitive pickup points on drums.
- E. Inspect number, distribution, and type of visible broken wires.

NOTICE

Continued use of rope depends upon good judgment by a designated person in evaluating remaining strength in a used rope after allowance for deterioration disclosed by inspection. Continued rope operation depends upon this remaining strength.

Periodic Inspection

Any deficiencies, such as those listed below, shall be carefully examined and determination made as to whether they constitute a hazard:

1. Inspect for deformed, cracked or corroded members in the crane structure and entire boom.
2. Inspect for loose bolts, particularly mounting bolts.
3. Inspect for cracked or worn sheaves and drums.
4. Inspect for worn, cracked, or distorted parts such as pins, bearings, shafts, gears, rollers and devices.
5. Inspect for excessive wear on brakes and clutch system parts and linings.
6. Inspect crane hooks for cracks.
7. Inspect travel steering, braking, and locking devices for malfunction.
8. Inspect for excessively worn or damaged tires.
9. Inspect hydraulic hose, fittings, and tubing for the following problems:
 - A. Evidence of leakage at the surface of the flexible hose or its junctions with the metal and coupling.
 - B. Blistering, or abnormal deformation to the outer covering of the hydraulic or pneumatic hose.
 - C. Leakage at threaded or clamped joints that cannot be eliminated by normal tightening or recommended procedures.
 - D. Evidence of excessive abrasion or scrubbing on the outer surface of a hose, rigid tube, or fitting. Means shall be taken to eliminate the interference of elements in contact or otherwise protect the components.
10. Inspect hydraulic pumps and motors for the following problems:
 - A. Loose bolts and fasteners.
 - B. Leaks at joints between sections.
 - C. Shaft seal leaks.
 - D. Unusual noises or vibrations.
 - E. Loss of operating speed.
 - F. Excessive heating of fluid.
 - G. Loss of pressure.
11. Inspect hydraulic valves for the following:
 - A. Cracks in valve housing.
 - B. Improper return of spool to neutral position.
 - C. Leaks at spools or joints.
 - D. Sticking spools.
 - E. Failure of relief valves to attain or maintain correct pressure setting.
 - F. Relief valve pressure shall be checked as specified by the manufacturer.
12. Inspect hydraulic cylinders for the following problems:
 - A. Driving caused by fluid leaking across piston.
 - B. Rod seals leaking.
 - C. Leaks at welding joints.
 - D. Scored, nicked, or dented cylinder rods.
 - E. Damaged case (barrel).

- F. Loose or deformed rod eyes or connecting joints.
13. Inspect hydraulic filters for evidence of rubber particles on the filter elements indicating possible hose, O-ring, or other rubber component deterioration. Metal chips or pieces on the filter may denote failure in pumps, motors, or cylinders. Further inspection will be necessary to determine the origin of the problem before corrective action can be taken.
 14. Inspect labels to confirm correct location and legibility. Reference decals layout in this manual for proper location of decals.
 15. Rope inspections need not be at equal calendar intervals and should be more frequent as the rope approaches the end of useful life. A qualified person shall inspect the wire rope based on such factors as:
 - A. Expected rope life as determined by experience on the particular installation or similar installations.
 - B. Severity of environment.
 - C. Percentage of capacity lifts.
 - D. Frequency rates of operation.
 - E. Exposure to shock loads.
 - i. This inspection shall cover the entire length of the rope. Only the surface wires need to be inspected and no attempt should be made to open the rope. Any deterioration resulting in appreciable loss of original strength shall be noted and determination made as to whether use of the rope would constitute a hazard. A few notable deterioration points are listed below:
 1. Reduction of rope diameter below nominal diameter due to loss of core support.
 2. Internal or external corrosion.
 3. Wear of outside wires.
 4. Severely corroded, cracked, bent, worn, or improperly applied connections.

Cranes Not In Regular Use

A crane, which has been idle for a period of more than one month or more, shall be given an inspection conforming to the "initial" and "periodic" inspection requirements of this section.

Inspection Records

Dated records of periodic inspection should be made on critical items such as brakes, crane hooks, rope, cylinders, and relief pressure valves.

Testing Requirements

NOTICE

Reference ASME B30.5 and OSHA 1910.180 for complete testing requirements.

WARNING

All testing shall be performed by designated personnel only. Prior to initial use, all new, altered, modified, or extensively repaired cranes shall be inspected by a designated person to ensure compliance with provisions of this standard.

1. Test all functions to verify speed and operation.
2. Ensure all safety devices are working properly.
3. Confirm operating controls comply with appropriate function labels.
4. Test loads shall not exceed 110% of the manufacturer's load rating.
5. Written reports shall be maintained showing test procedures and confirming the adequacy of repairs.

General Repairs and Maintenance



Reference ASME B30.5 and OSHA 1910.180 for complete maintenance and repair requirements.



All repairs and maintenance shall be performed by designated personnel only. Establish a preventative maintenance program based on this section. Obtain all replacement parts from your local authorized distributor.

Maintenance Precautions

- 1. Place crane where it will cause the least interference with other equipment or operations.
- 2. Verify all controls are in the OFF position and all operating features secured from inadvertent motion by brakes, pawls, or other means.
- 3. The means for starting the crane shall be rendered inoperative.
- 4. The boom should be secured in place before maintenance.
- 5. Relieve hydraulic oil pressure from all hydraulic circuits before loosening or removing hydraulic components.
- 6. WARNING or OUT OF ORDER signs shall be placed on all crane controls.
- 7. After adjustments and repairs have been made, the crane shall not be returned to service until all guards have been reinstalled, trapped air removed from hydraulic system (if required), safety devices reactivated, and maintenance equipment removed.

Adjustments and Repairs

- 1. Any hazardous conditions disclosed by the inspection requirement shall be corrected before operation of crane is resumed.
- 2. Adjustments shall be maintained to assure correct of functioning of components, the following are examples:
 - A. Function operating mechanism.
 - B. Safety devices.
 - C. Control systems.
- 3. Repairs or replacements shall be provided as needed for operation; the following are examples:
 - A. Critical parts of functional operating mechanisms which are cracked, broken, corroded, bent, or excessively worn.
 - B. Critical parts of the crane structure which are cracked, bent, broke, or excessively corroded.
 - C. Crane hooks showing cracks, damage, or corrosion shall be taken out of service.
- 4. If bleeding the hydraulic system is required, run each crane function until smooth operation of that particular function is noticeable.

Lubrication

All moving parts of the crane, for which lubrication is specified, should be regularly lubricated per the manufacturer’s recommendations and procedures.

Rope Replacement

No precise rules can be given for determination of the exact time for replacement of rope, since many variable factors are involved.



Replacement rope shall have a strength rating at least as great as the original rope furnished or recommended by Auto Crane. A rope manufacturer, Auto Crane, or a qualified person shall specify any deviation from the original size, grade, or construction.

Conditions such as the following shall be reason for questioning continued use of the rope or increasing the frequency of inspection:

- 1. In running ropes, six randomly distributed broken wires in one strand in one lay.
- 2. One outer wire broken at the contact point with the core of the rope structure and protrudes or loops out of the rope structure. Additional inspection of this section is required.
- 3. Wear of one third of the original diameter of the outside individual wire.
- 4. Kinking, crushing, bird caging, or any other damage resulting in distortion of the rope structure.
- 5. Evidence of any heat damage from any cause.
- 6. Reduction of nominal diameter of more than:
 - A. 1/64” (0.4mm) – for diameters up to and including 5/16” (8mm)
 - B. 1/32” (0.8mm) – for diameters 3/8” (9.5mm) through and including 1/2” (13mm)
 - C. 3/64” (1.2mm) – for diameters 9/16” (14.5mm) through and including 3/4” (19mm)
 - D. 1/16” (1.6mm) – for diameters 7/8” (22mm) through and including 1-1/8” (29mm)
 - E. 3/32” (2.4mm) – for diameters 1-1/4” (32mm) through and including 1-1/2” (38mm)
- 7. In standing ropes, more than two broken wires in one lay in sections beyond end connections or more than one broken wire at an end connection.

Rope Installation and Maintenance

- 1. Rope should be stored to prevent damage and deterioration.
- 2. Unreeling or uncoiling of rope shall be done as recommended by the rope manufacturer and with care to avoid kinking or inducing twist.
- 3. Before cutting a rope, seizing shall be placed on each of the place where the rope is to be cut to prevent unlaying of the strands. On preformed rope, one seizing on each side of the cut is required. On non-preformed ropes of 7/8” (22mm) or smaller, two seizings on each side of the cut are required. For non-preformed rope 1 in. (25mm) diameter or larger, three seizings on each side of the cut are required.
- 4. During installation care should be exercised to avoid dragging of the rope in the dirt or around objects that will scrape, nick, crush, or induce sharp bends in it.
- 5. Rope should be maintained in a well-lubricated condition. It is important that lubricant applied as a part of the maintenance program shall be compatible with the original lubricant, and to this end the rope manufacturer should be consulted. Lubricant applied shall be the type that does not hinder visual inspection. Those sections of rope that are located over sheaves or otherwise hidden during inspection and maintenance procedures require special attention when lubricating rope. The object of rope lubrication is to reduce internal friction and to prevent corrosion.
- 6. When an operating rope shows greater wear or well-defined localized areas than on the remainder of the rope, rope life can be extended in some cases by shifting the wear to different areas of the rope.

Paint Finish Maintenance

The paint finish on Auto Crane products can become damaged during normal use when chipped, scratched, exposed to harsh chemicals, cleaned with pressure washers, or similar. During periods when the truck is exposed to salt or other corrosive chemicals, wash Auto Crane products weekly. Inspect the paint finish monthly or when washed. Immediately repair any exposed bare metal or rust. Repair damaged paint on Auto Crane products with the following procedure:

1. Sand the damaged area to bare metal.
2. Use a solvent to clean the sanded area to remove sanding debris and residue.
3. Wipe dry with a clean cloth to remove any remaining debris and residue.
4. Use a primer compatible with PPG Spectracron 573.
5. Prime the sanded areas to a minimum 2 mil dry film thickness per the primer manufacturer’s instructions.
6. Use a paint compatible with PPG Spectracron 573 epoxy primer and PPG Spectracron QT360HW topcoat paint.
7. Apply the topcoat paint to a minimum 2 mil dry film thickness within 24 hours of applying the primer.
8. The final primer and topcoat should have approximately a 4 mil dry film thickness.

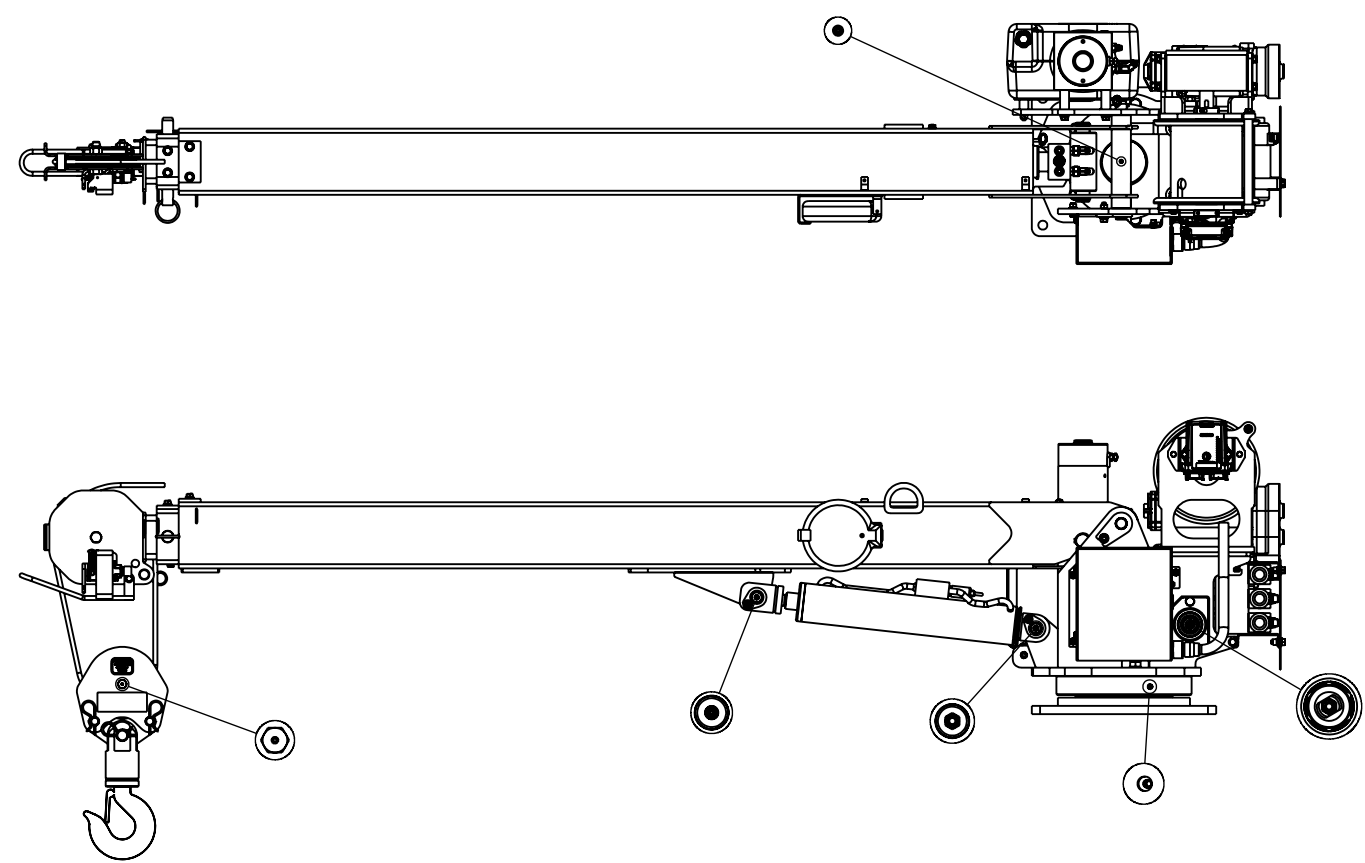
Lubrication and Maintenance Schedule

Service Performed	Instructions	Daily	Weekly	3 Months	Yearly
Load Hook	Inspect hook and latch for deformation, cracks, and corrosion	X			
Cable Drum	Ensure cable is wound evenly on drum	X			
Hoist Cable	Check for flattening, kinks, broken strands	X			
Hyd. Hoses	Visual inspection	X			
Hyd. Fluid	Check fluid level	X			
Pin Retaining Bolts	Check torque to 23 ft-lb (Grade 5), 35 ft-lb (Grade 8) as required	X			
Mounting Bolts	Check torque to 501 ft-lb (Gr 8 hex head), 475 ft-lb (socket head)		X		
Rotating Ring Gear	Lube with MobileTac LL, Lubriplate or equivalent		X		
Sheave Bearings	Sealed bearing, replace if rough or loose		X		
All Other Bolts	Check and tighten as required		X		
Lift Cylinder Bearings	Grease with MobilePlex EP-2 or equivalent at zerk fittings			X	
Rotation Bearing	Grease with MobilePlex EP-2 or equivalent at zerk fittings			X	
Rotation Bearing Bolts	Check torque to 225 ft-lb			X	
Hoist Mounting Bolts (HC-10, 12S, 12, 14)	Check torque to 173 ft-lb			X	
Hoist Mounting Bolts (All others)	Check torque to 85 ft-lb			X	
Slewing Drive (HC-7x/8x)	Grease with MobilePlex EP-2 or equivalent at zerk fittings			X	
Hydraulic Fluid	Drain, flush, and refill with Superfilm 5W-20 or equivalent				X
Rotation Gearbox (HC-12/14)	Drain, flush, and refill with 52 oz of GL-5 EP-80/90 gear oil				X
Rotation Gearbox (All Others)	Drain, flush, and refill with 58 oz of EP-140 gear oil				X
Boom Slide Pads	Pads greased when replaced				
Filter, Valve Block	Replace annually, every 200 hours of operation, or as directed by the dirty filter sensor				
For additional information, see OSHA 1910.180 and ASME B30.5					

Lubrication Points

- 1. Use only authorized parts/lubrication. Any damage or malfunction caused by the use of unauthorized parts is not covered by Warranty or Product Liability.
- 2. Once a bolt has been tightened to specification then removed, the bolt should be replaced with a new one. Auto Crane Company recommends this crane be serviced per the "Crane Inspection Log" P/N 999978. Fill these logs in at the intervals noted and kept as a permanent record. Additional copies are available from your local distributor.

NOTE
• LUBRICATION POINTS FOR REFERENCE ONLY IN MANUAL



Adjusting Oil Cooled Worm Brake

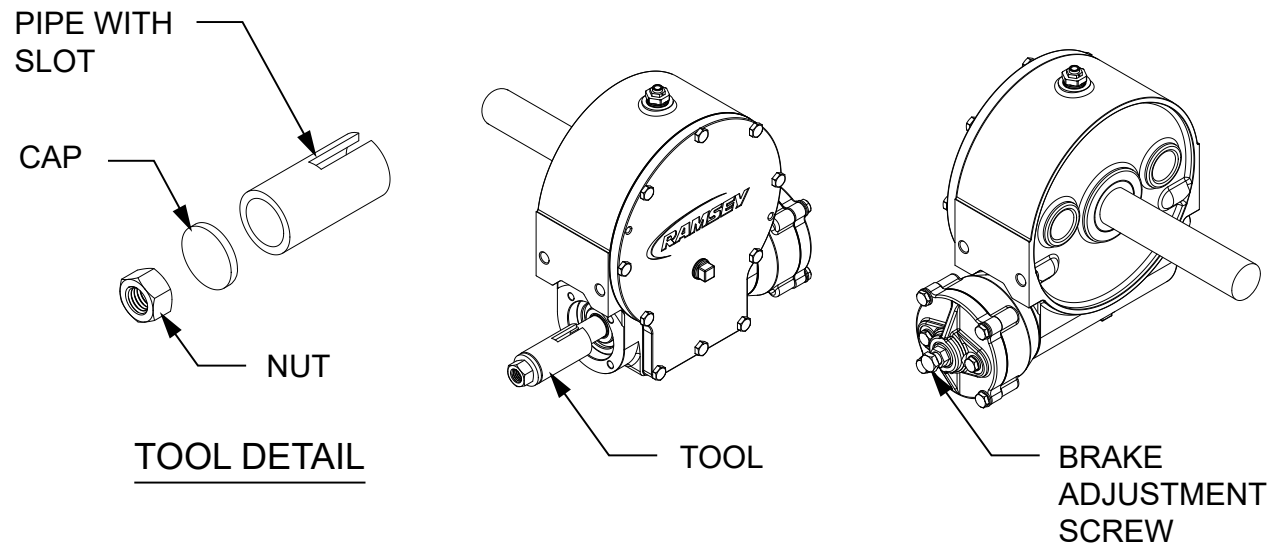
The oil-cooled, fully adjustable, automatic safety brake operates in the worm housing lubricant, all part being submerged in oil. When the brake wears to the point that the load begins to drift, the brake can be adjusted as follows:

- 1. Loosen the lock nut on the adjusting screw.
- 2. Tighten the brake by turning the adjusting screw clockwise.

CAUTION: Only ¼ turn is usually required to adjust the brake. Over-tightening can cause overheating, and damage to the brake parts. Tighten the lock nut after adjustment is completed

If the brake does not respond to adjustment then a new leaf spring and brake disc is needed. A torque wrench can be equipped with a special adapter to fit the input shaft (worm) of the winch. The adapter can be made by welding a nut to the end of a piece of tubing as shown in the following figure.

Brake Adjustment



After welding the cap and nut to the tubing, slot the tubing as shown. This will allow the special adapter to slide over the keyway and then act as a large socket. A torque wrench can then be used to apply the proper torque. Turn the torque wrench so that the drum turns in the spool out direction or lowering direction. The torque ratings should be between 8-13 ft-lbs.

If the torque wrench does not show the proper value as it turns, then the worm brake adjusting bolt should be turned clockwise ¼ turn. Each time the adjusting bolt is turned, check the torque reading. Continue this procedure until the proper torque reading is achieved. Then tighten the lock nut.

Rotation Bearing Replacement

All bearings wear over time, including the main rotation bearing of the crane. There are no precise rules for replacing the main rotation bearing because of many variable factors. There are common symptoms during crane operation that may indicate rotation bearing wear. These include:

- 1. Excessive noise.
- 2. Rough rotation.
- 3. Increase drive power required to rotate.
- 4. Metal particles in grease.

Replace the Bearing If:

- 5. Any noticeable cracking in the bearing housing.
- 6. Damage to internal teeth.
- 7. Excessive axial play is present. See Axial Play Allowance Check Procedure.

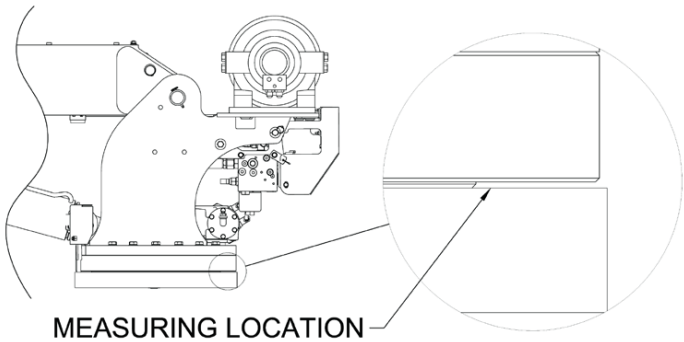


WARNING Never try to repair a rotation bearing. For a replacement bearing contact your local authorized distributor.

Axial Play Allowance Procedure

- 1. Raise the boom to the maximum angle and measure the clearance between base plate and the rotation bearing with a dial or filler gauge.
- 2. Lower the boom to the horizontal position and measure the clearance between the base plate and the rotation bearing with a dial indicator or feeler gauge.
- 3. If the difference between the two measurements exceeds the specification, replace the bearing.
- 4. Rotate crane 45°, then repeat steps 1 and 2 until you reach 360° of rotation.

Crane Model	Axial Play Allowance	Rotation Bearing Replacement Kit
EC-2X, EHC-3.2, HC-3.2, EHC-4	1.5 mm	320878010
EHC-5, EHC-6, HC-5, HC-6, HC-7, HC-8, 8406H, HC-9	1.6 mm	480023010
HC-7x, HC-8x	0.1 mm	479200220
HC-10, HC-12S	1.8 mm	372064010
HC-12, HC-14	2.3 mm	470001010



General Installation

For information specific to your crane, such as mounting hole diameter, bolt size and grade, and hydraulic requirements, see General Dimensions.

- 1. Reference General Dimensions for minimum chassis GVWR needed for crane.
- 2. The vehicle must be equipped with an engine speed control and tachometer.
- 3. Ensure the mounting surface is properly reinforced to withstand the capacity loading of the crane. Ensure the outriggers are used to provide total stability for the truck.
- 4. If not using an Auto Crane body, cut the proper sized hole in the mounting location (centered with mounting bolts) for access to hydraulic connections.
- 5. Ensure the mounting bolts are the proper size and grade and torque to 315 ft-lb.
- 6. Pressure and return hoses are not furnished with the crane and must be supplied by the installer with lengths determined at installation. Reference General Specifications for pressure and flow requirements.



CAUTION Maintain ISO 18/16/13 fluid cleanliness levels. Failure to use clean hydraulic hoses and components may contaminate the crane and hydraulic system and void warranty.



NOTICE Excess flow will cause erratic operation and too little flow will cause poor crane operation.

Each 16’ Boom crane arrives with a shipping tote that contains the following items:

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	4	005500000	SCREW HX HD 1/4-20UNC X 3/4 LG
2	4	020200000	WASHER SP LK 1/4
3	4	022101000	WASHER SP LK 3/4
4	4	022102000	WASHER FL 3/4
5	6	083800000	CLIP, CABLE #838
6	1	320806000	CONDUCTOR ASSY #10 GA x 48in
7	1	320988009	KIT, ALIGNMENT DECAL LOCATION
8	1	361106580	REMOTE, NON-PROPORTIONAL, CERVIS
9	1	404207001	LOAD CHART, EHC-4
10	1	404211050	TRAVELING BLOCK ASSY, 4004
11	1	404218000	TWECO CABLE ASSY, W/ MASTER SWITCH
12	1	404223010	CABLE, POWER HEAVY-DUTY 25FT LG
13	4	404226000	SCR HX HD 3/4-16UNF x 3 LG GR 8
14	4	404227000	NUT HX 3/4-16UNF, GR 8
15	1	460159000	TETHER CABLE, TRANSMITTER
16	1	479824002	DECAL, STABILITY CHART
17	1	479824003	DECAL, STABILITY CHART, CUSTOM ZONE PERCENTAGES
18	1	715064001	DECAL, BOOM STOW, CALIFORNIA
19	1	715321032	SHIPPING TOTE, 15 GAL, BLACK / RACER RED
20	1	990800043	OWNER'S MANUAL, EHC-4 16' 20', FM, CERVIS

Please check to make sure the above items have been supplied with your crane. If any items are missing, please notify your dealer, or contact Auto Crane.

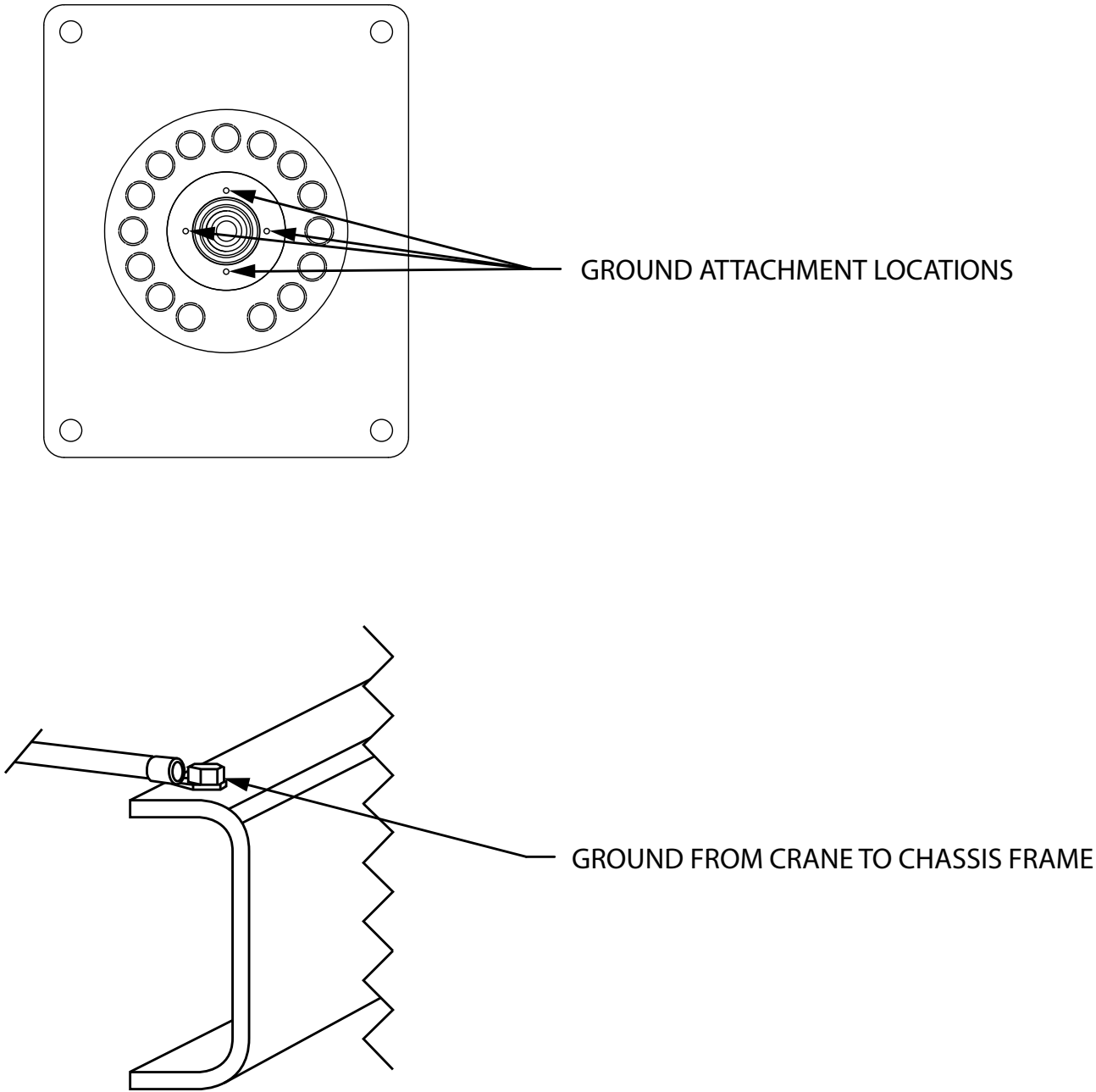
Each 20’ Boom crane arrives with a shipping tote that contains the following items:

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	4	005500000	SCREW HX HD 1/4-20UNC X 3/4 LG
2	4	020200000	WASHER SP LK 1/4
3	4	022101000	WASHER SP LK 3/4
4	4	022102000	WASHER FL 3/4
5	6	083800000	CLIP, CABLE #838
6	1	320988009	KIT, ALIGNMENT DECAL LOCATION
7	1	361106580	REMOTE, NON-PROPORTIONAL, CERVIS
8	1	404218000	TWECO CABLE ASSY, W/ MASTER SWITCH
9	1	404223010	CABLE, POWER HEAVY-DUTY 25FT LG
10	1	404223020	COND ASSY 4GA X 48 BLK
11	4	404226000	SCR HX HD 3/4-16UNF x 3 LG GR 8
12	4	404227000	NUT HX 3/4-16UNF, GR 8
13	1	404240018	LOAD CHART, EHC-4 20FT BOOM
14	1	460159000	TETHER CABLE, TRANSMITTER
15	1	479824002	DECAL, STABILITY CHART
16	1	479824003	DECAL, STABILITY CHART, CUSTOM ZONE PERCENTAGES
17	1	715064001	DECAL, BOOM STOW, CALIFORNIA
18	1	715321032	SHIPPING TOTE, 15 GAL, BLACK / RACER RED
19	1	990800043	OWNER'S MANUAL, EHC-4 16' 20', FM, CERVIS

Please check to make sure the above items have been supplied with your crane. If any items are missing, please notify your dealer, or contact Auto Crane.

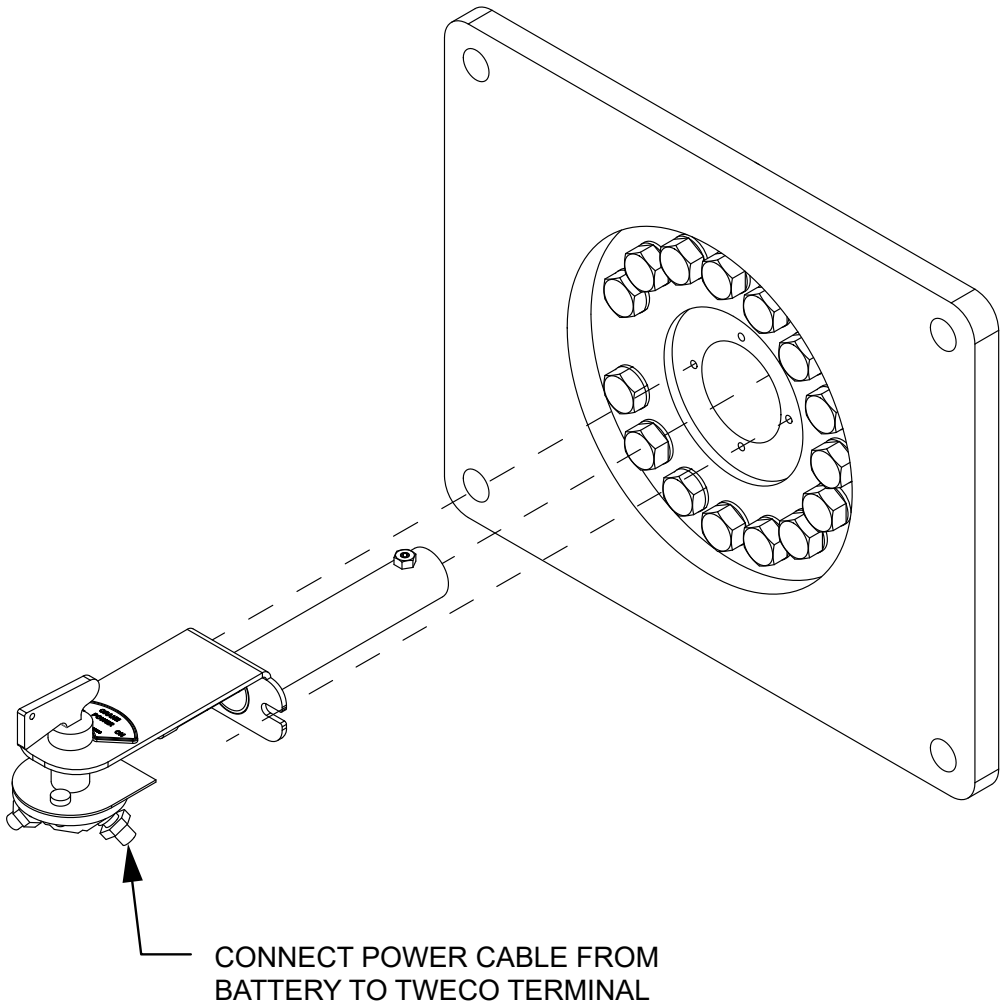
Grounding Instructions

Attach ground wire to bottom of the crane. Run the ground wire down through the crane box. Locate cable so that it will be protected and avoid sharp edges. Attach ground from crane to chassis frame.



TWECO Connection

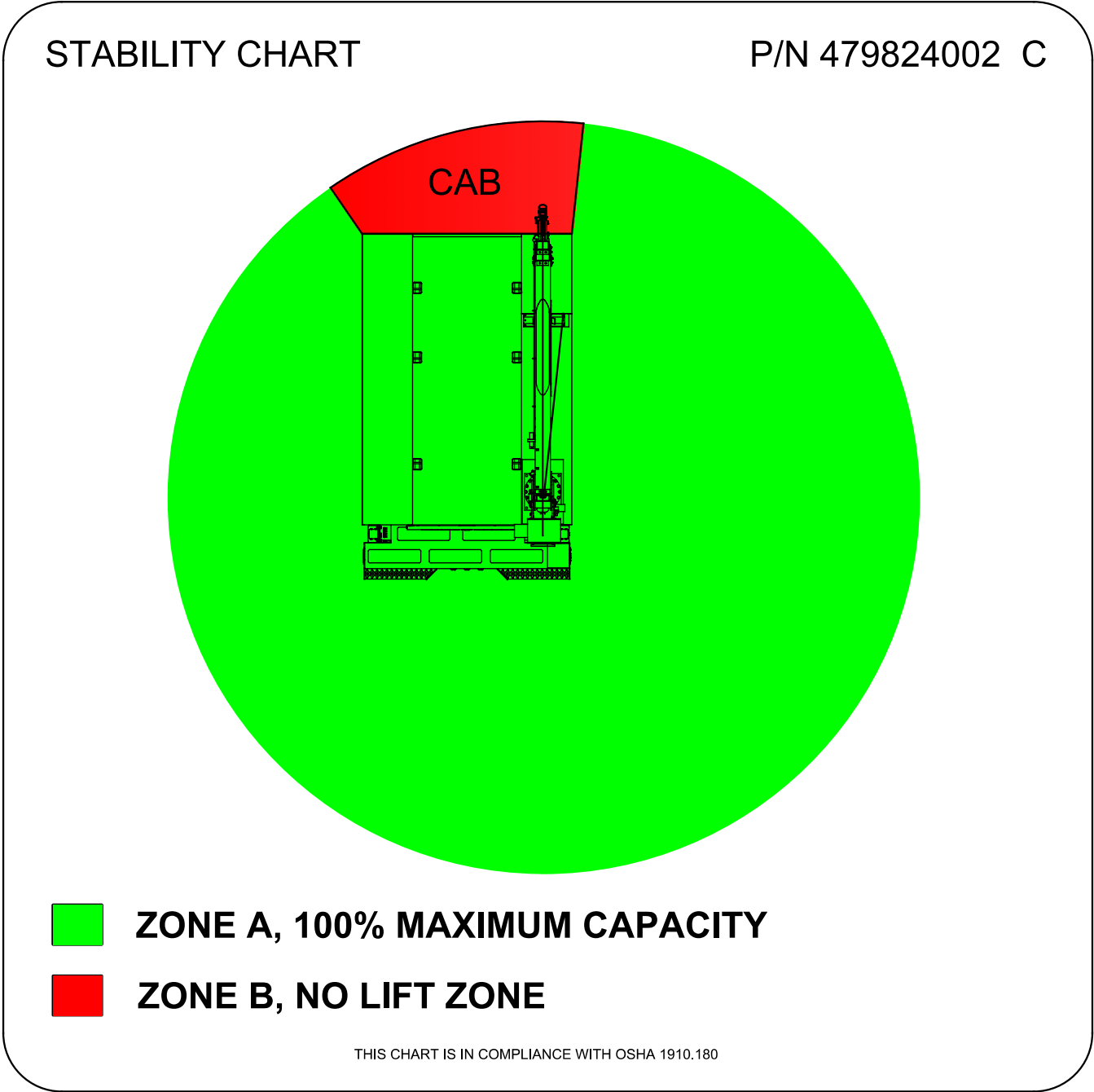
Insert TWECO to bottom of crane. Connect power cable from battery to terminal post on Tweco.



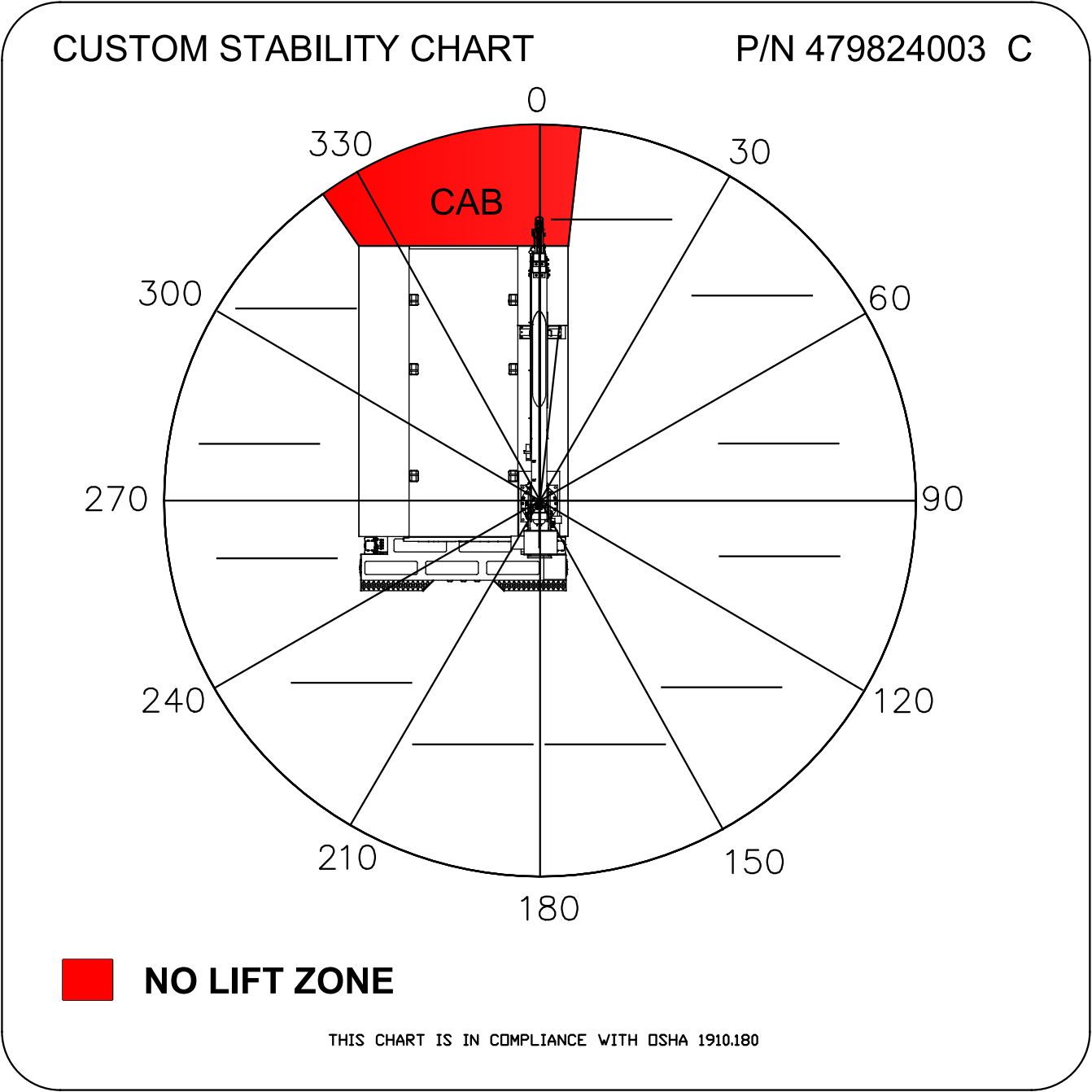
Stability Chart Installation

There is a stability chart included in the ship kit. This decal is typically installed on the inside of the door of the crane box. This decal is to alert the user of the available crane capacities around the vehicle.

479824002 decal will be installed on an Auto Crane body that was outfitted with an Auto Crane and Auto Crane outriggers. Auto Crane has designed the body, crane and outrigger to have stability based on the chart below:

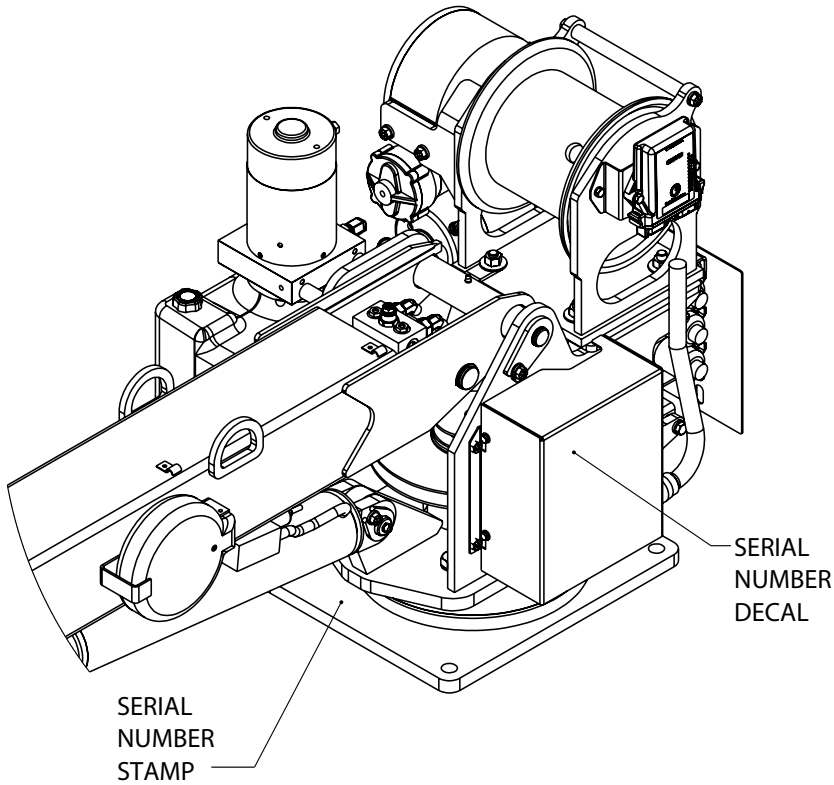


479824003 decal will be installed on an Auto Crane body that was not outfitted with an Auto Crane crane and Auto Crane outriggers. The stability chart provides lines to write in the tested stability percentage at each section below:



Small EH Crane Serial Number Location

The serial number is stamped into top of the of the baseplate weldment as well as the decal on left side plate as shown below.



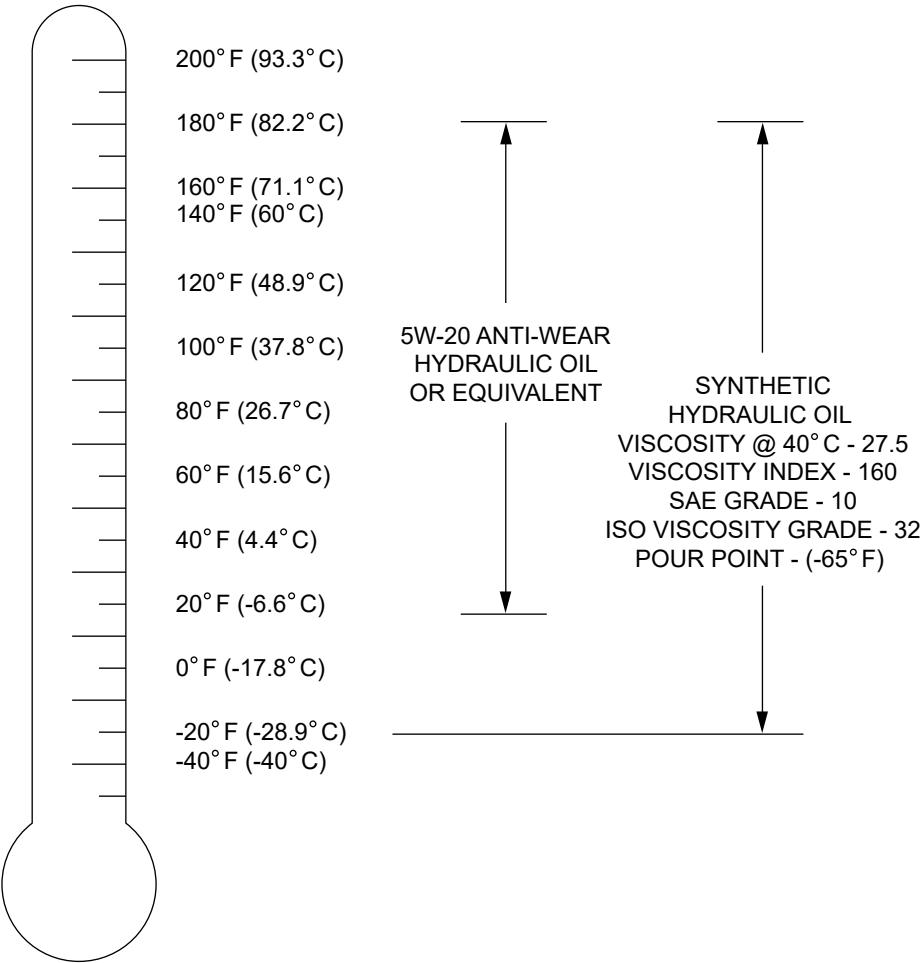
Recommended Operating Temperature

- 1. In applications where low oil temperatures may exist (below -20° F), an external heating system may be required.
- 2. A symptom of excessively low oil temperatures is hydraulic pump/PTO operation but no fluid flow from tank.

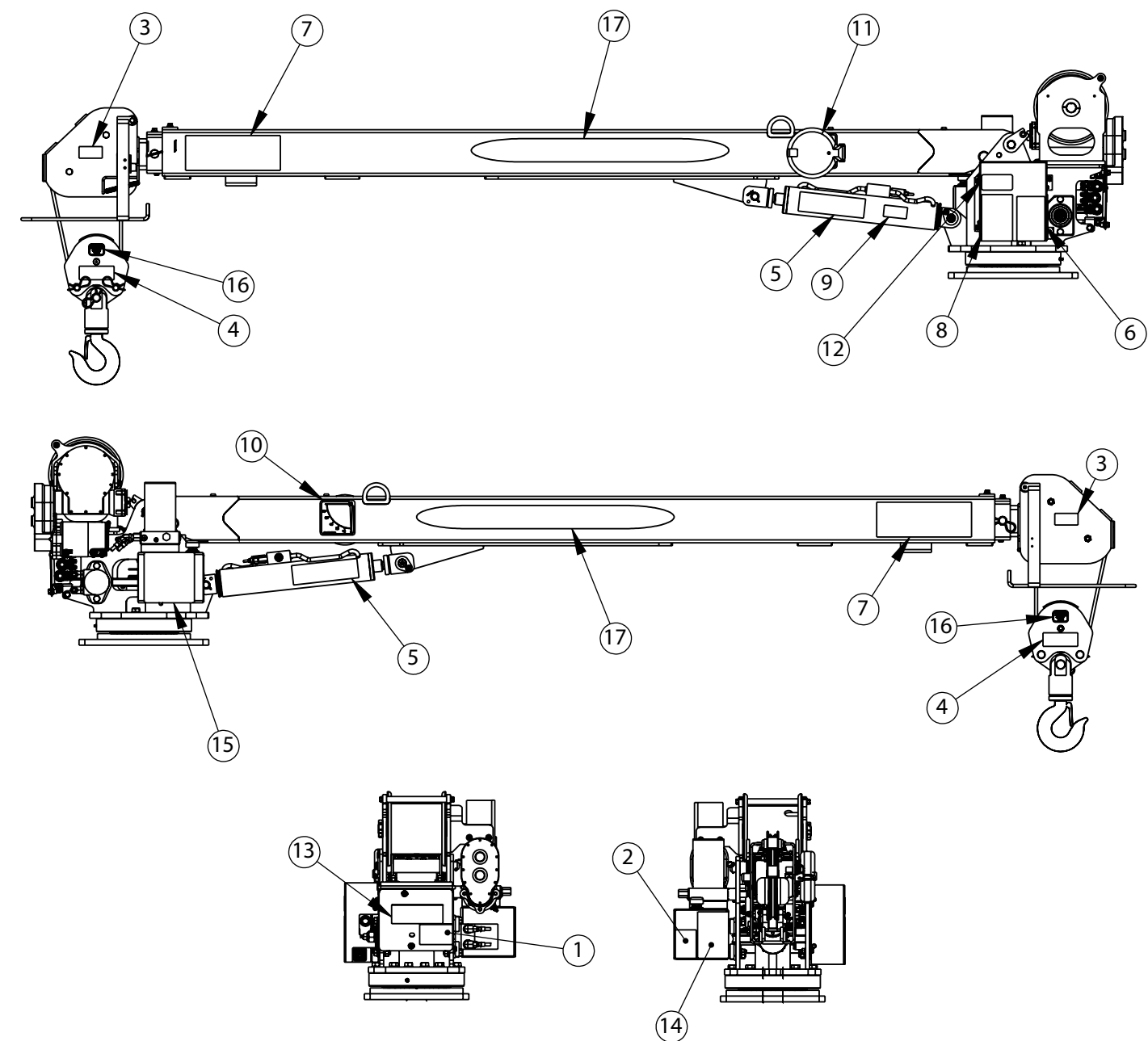


Hydraulic reservoir oil temperatures must not exceed 180° F or damage to crane may occur. This may affect crane warranty.

OIL TEMPERATURE



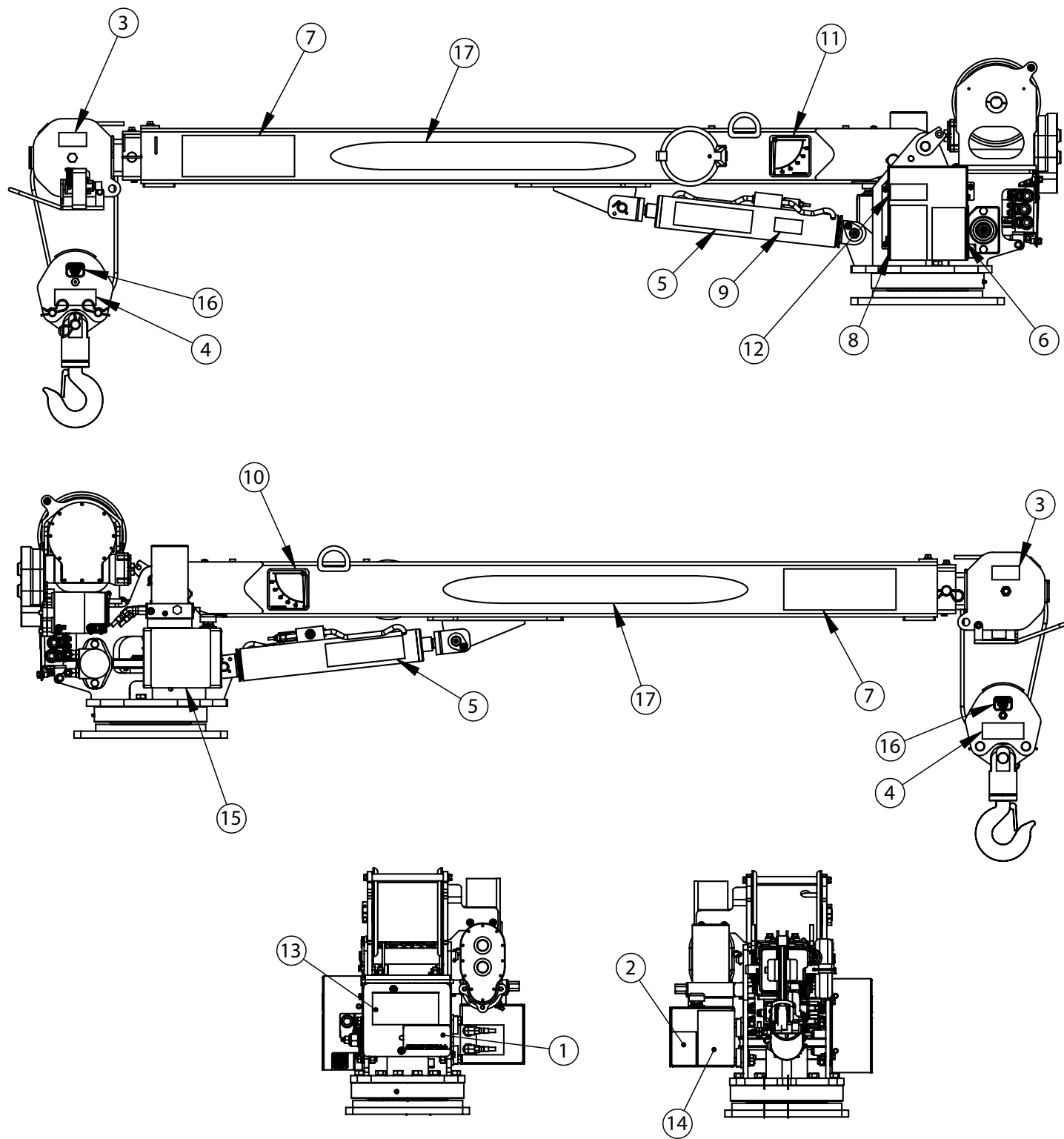
Decal Layout - P/N 404240009



Decal Layout - P/N 404240009

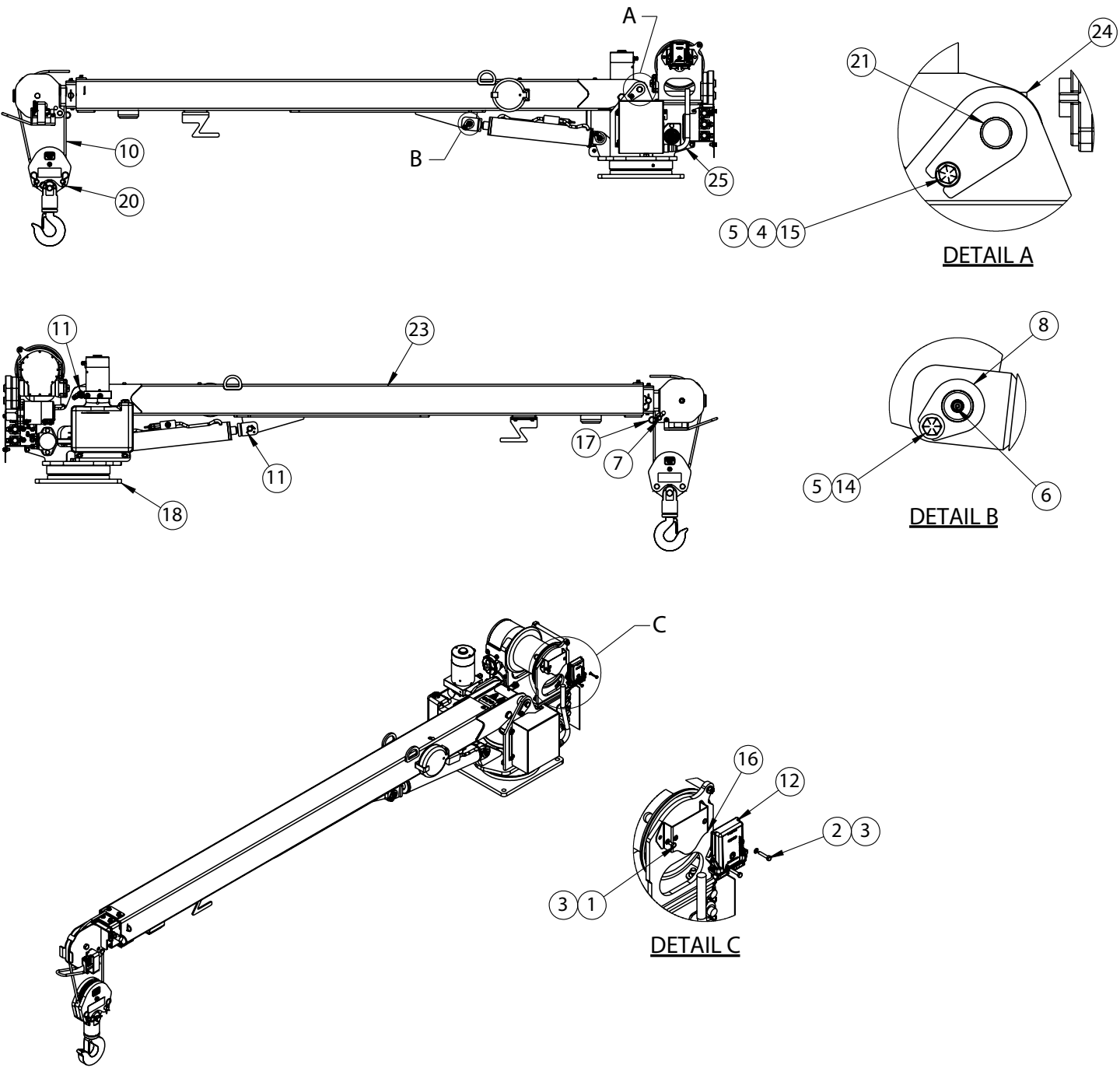
ITEM NO	QTY	PART NUMBER	DESCRIPTION
1	1	408240000	DECAL, AMERICAN FLAG, MADE IN THE U.S.A
2	1	406320000	DECAL WARNING - OVERLOAD
3	2	405170000	DECAL STAY CLEAR OF BOOM
4	2	405180000	DECAL STAY CLEAR OF LOAD
5	2	405190000	DECAL DANGER SCISSOR POINT
6	1	405790000	DECAL OPERATION INSTRUCTIONS
7	2	405290000	DECAL DANGER "ELECTROCUTION HAZARD" POWER LINE
8	1	405800000	DECAL TRAINED OPERATOR
9	1	405870000	DECAL WARNING LOAD SENSOR
10	1	320318000	DECAL ANGLE INDICATOR CS
11	1	320318001	DECAL ANGLE INDICATOR SS
12	1	330622000	DECAL SERIAL NO
13	1	360034000	DECAL AUTO CRANE LOGO
14	1	460169000	DECAL WARNING, REMOTE CONTROL
15	1	404240018	LOAD CHART, EHC-4 20FT BOOM
16	2	404212000	DECAL MAX BLOCK LOAD 4004
17	2	600047011	DECAL, AUTO CRANE EHC-4 LOGO, FLATTENED OVAL, 33.25 IN LONG

Decal Layout - P/N 404209000

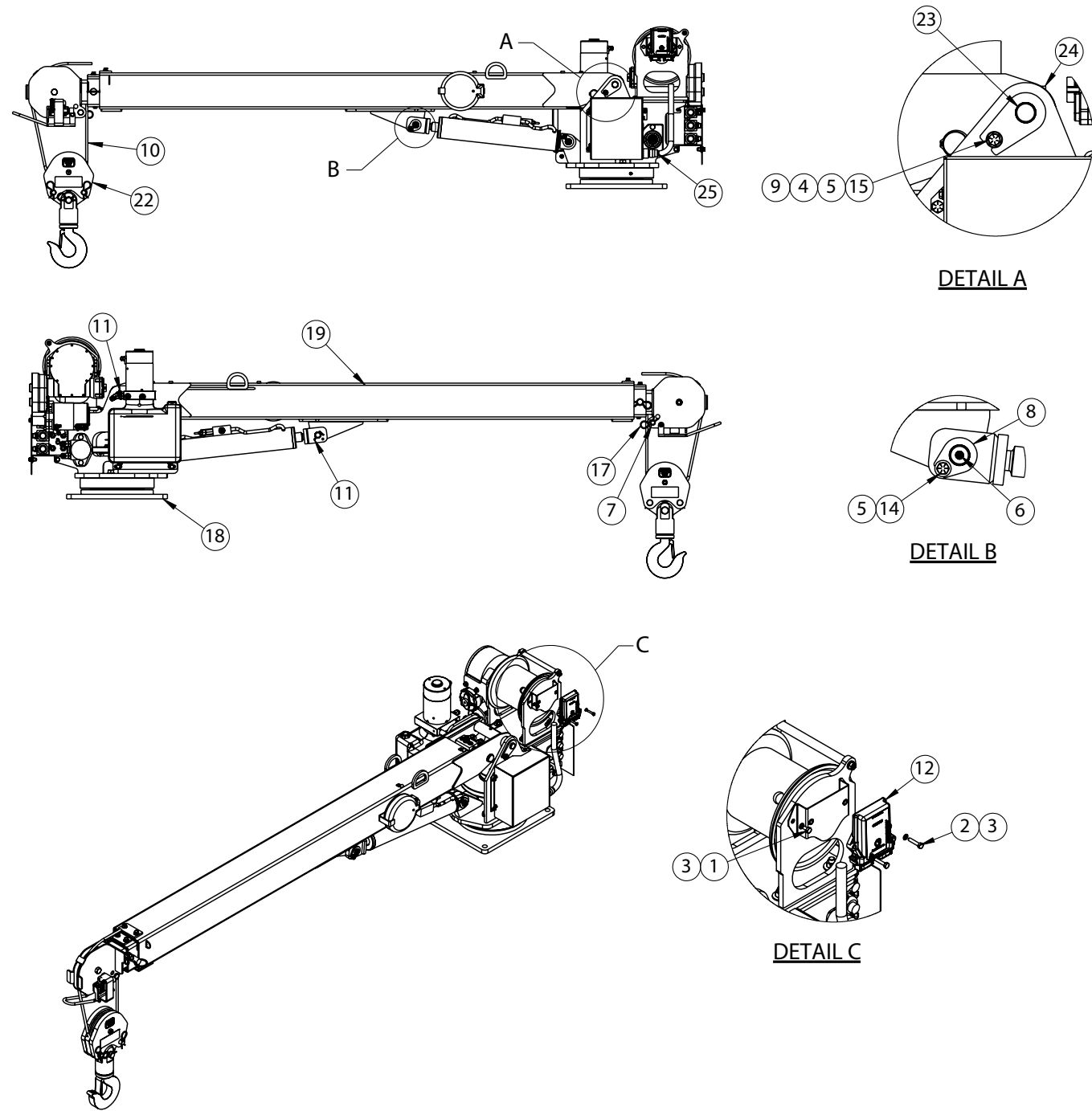


Decal Layout - P/N 404209000

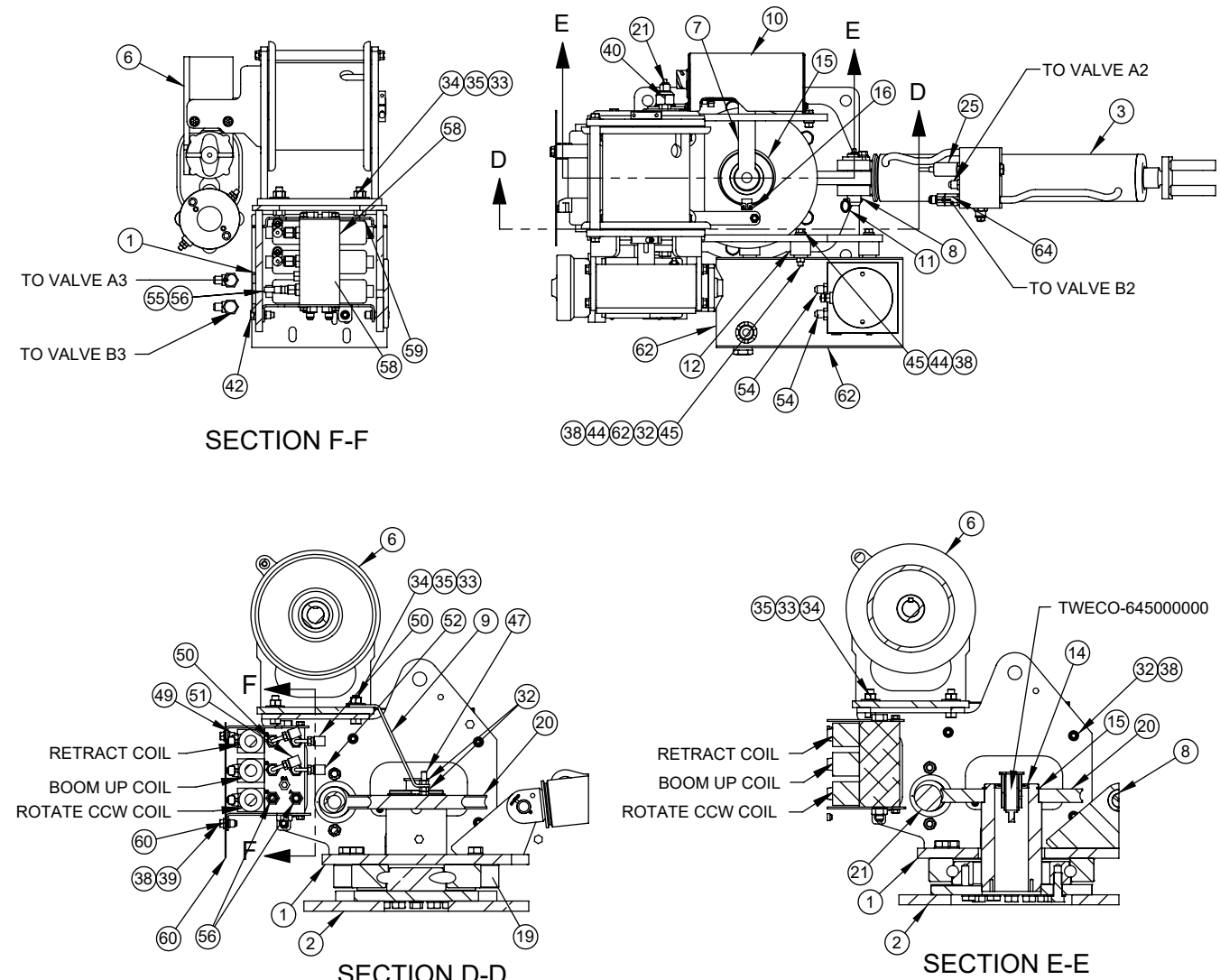
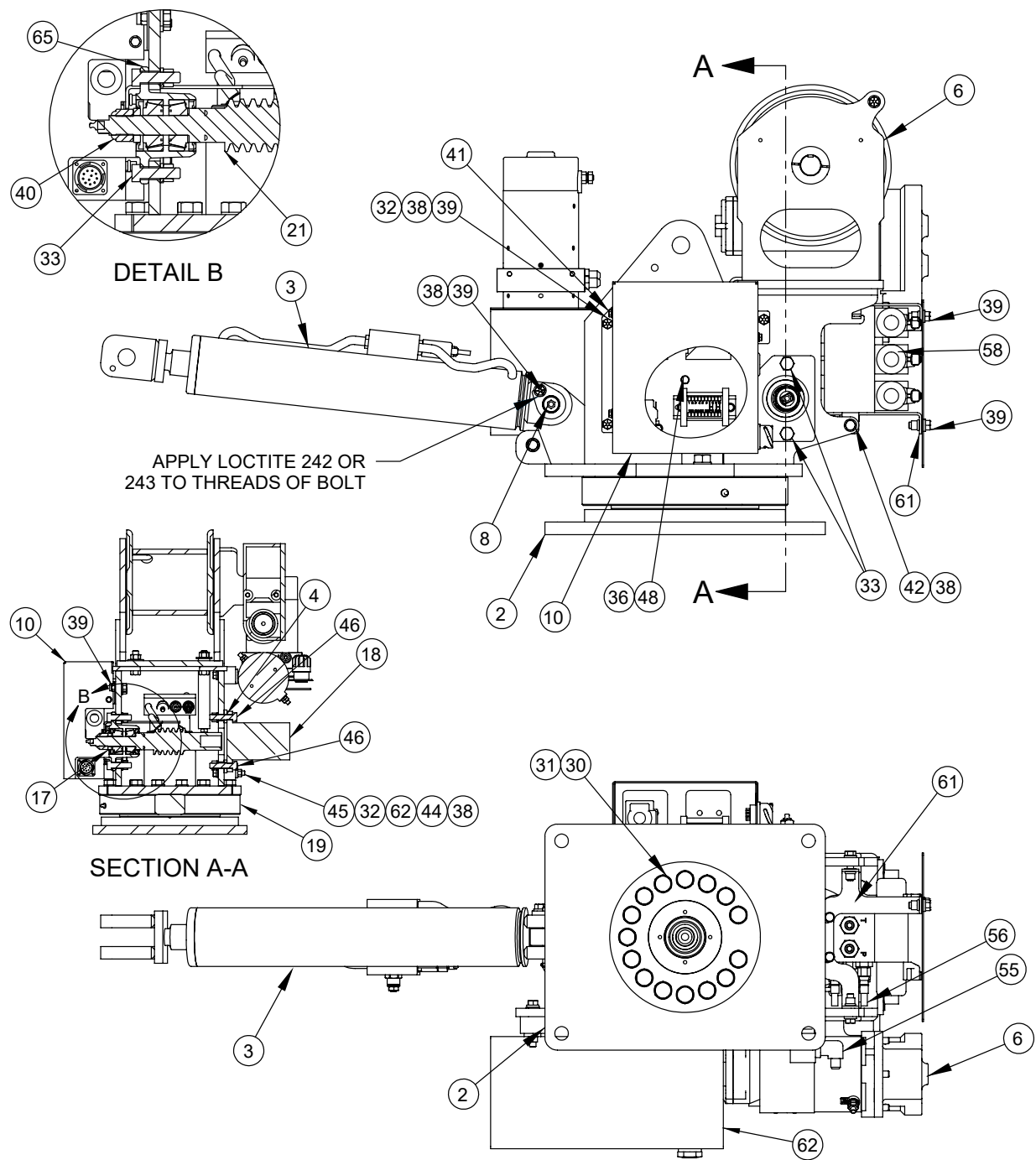
ITEM NO.	QTY	PART NUMBER	DESCRIPTION
1	1	408240000	DECAL, AMERICAN FLAG, MADE IN THE U.S.A.
2	1	406320000	DECAL WARNING - OVERLOAD
3	2	405170000	DECAL STAY CLEAR OF BOOM
4	2	405180000	DECAL STAY CLEAR OF LOAD
5	2	405190000	DECAL DANGER SCISSOR POINT
6	1	405790000	DECAL OPERATION INSTRUCTIONS
7	2	405290000	DECAL DANGER "ELECTROCUTION HAZARD" POWER LINE
8	1	405800000	DECAL TRAINED OPERATOR
9	1	405870000	DECAL WARNING LOAD SENSOR
10	1	320318000	DECAL ANGLE INDICATOR CS
11	1	320318001	DECAL ANGLE INDICATOR SS
12	1	330622000	DECAL SERIAL NO
13	1	360034000	DECAL AUTO CRANE LOGO
14	1	460169000	DECAL WARNING, REMOTE CONTROL
15	1	404207001	LOAD CHART, EHC-4
16	2	404212000	DECAL MAX BLOCK LOAD 4004
17	2	600047011	DECAL, AUTO CRANE EHC-4 LOGO, FLATTENED OVAL, 33.25 IN LONG



ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	2	590100000	SCREW HX HD 1/4-20UNC X 1/2 LG
2	2	620000000	SCREW HX HD 1/4-20UNC X 1 1/4 LG
3	4	202000000	WASHER SP LK 1/4
4	1	211000000	WASHER SP LK 3/8
5	2	021200000	WASHER FL 3/8
6	1	239000000	ZERK DRIVE GR
7	1	320434001	PIN, 3/4 X 2-3/4LG
8	1	320824000	PIN, LIFT CYLINDER
9	1	330372000	NUT HX 3/8 NC GR5
10	1	360155000	CABLE, GALV 5/16"X7X19X80'-3"
11	2	360678000	PIN, 3/16 COTTERLESS RING
12	1	361106581	RECEIVER, NON-PROPORTIONAL, CERVIS
13	1	361106582	KIT, NON-PROPORTIONAL EHC WIRELESS, CERVIS
14	1	366158000	SCW HX 3/8 NC X 3/4 GR8
15	1	366159000	SCREW HX HD 3/8-16UNC X 1 1/2 LG GR8
16	1	366715000	BRACKET ASSEMBLY, RECEIVER MOUNT
17	1	366813000	PIN HITCH
18	1	404181002	PEDESTAL ASSY, 4004EH
19	1	404209000	DECAL LAYOUT, 4004EH
20	1	404211050	TRAVELING BLOCK ASSY, 4004
21	1	404220000	PIN WDMT BOOM/PED
22	1	404240021	SHIP KIT, EHC-4 20', FM, CERVIS
23	1	404240100	EHC-4 BOOM (20FT) SINGLE SHEAVE
24	1	663300001	CABLE TIE, 18"
25	1	680180000	HARNESS, FM, 3203PR(X)



ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	2	005901000	SCREW HX HD 1/4-20UNC X 1/2 LG
2	2	006200000	SCREW HX HD 1/4-20UNC X 1 1/4 LG
3	4	020200000	WASHER SP LK 1/4
4	1	021100000	WASHER SP LK 3/8
5	2	021200000	WASHER FL 3/8
6	1	239000000	ZERK DRIVE GR
7	1	320434001	PIN, 3/4 X 2-3/4LG
8	1	320824000	PIN, LIFT CYLINDER
9	1	330372000	NUT HX 3/8 NC GR5
10	1	360155000	CABLE, GALV 5/16"X7X19X80'-3"
11	2	360678000	PIN, 3/16 COTTERLESS RING
12	1	361106581	RECEIVER, NON-PROPORTIONAL, CERVIS
13	1	361106582	KIT, NON-PROPORTIONAL EHC WIRELESS, CERVIS
14	1	366158000	SCW HX 3/8 NC X 3/4 GR8
15	1	366159000	SCREW HX HD 3/8-16UNC X 1 1/2 LG GR8
16	1	366715000	BRACKET ASSEMBLY, RECEIVER MOUNT
17	1	366813000	PIN HITCH
18	1	404181002	PEDESTAL ASSY, 4004EH
19	1	404189010	BOOM ASSY 4004, SINGLE SHEAVE
20	1	404209000	DECAL LAYOUT, 4004EH
21	1	404210002	SHIP KIT, EHC-4 16', FM, CERVIS
22	1	404211050	TRAVELING BLOCK ASSY, 4004
23	1	404220000	PIN WDMT BOOM/PED
24	1	663300001	CABLE TIE, 18"
25	1	680180000	HARNESS, FM, 3203PR(X)



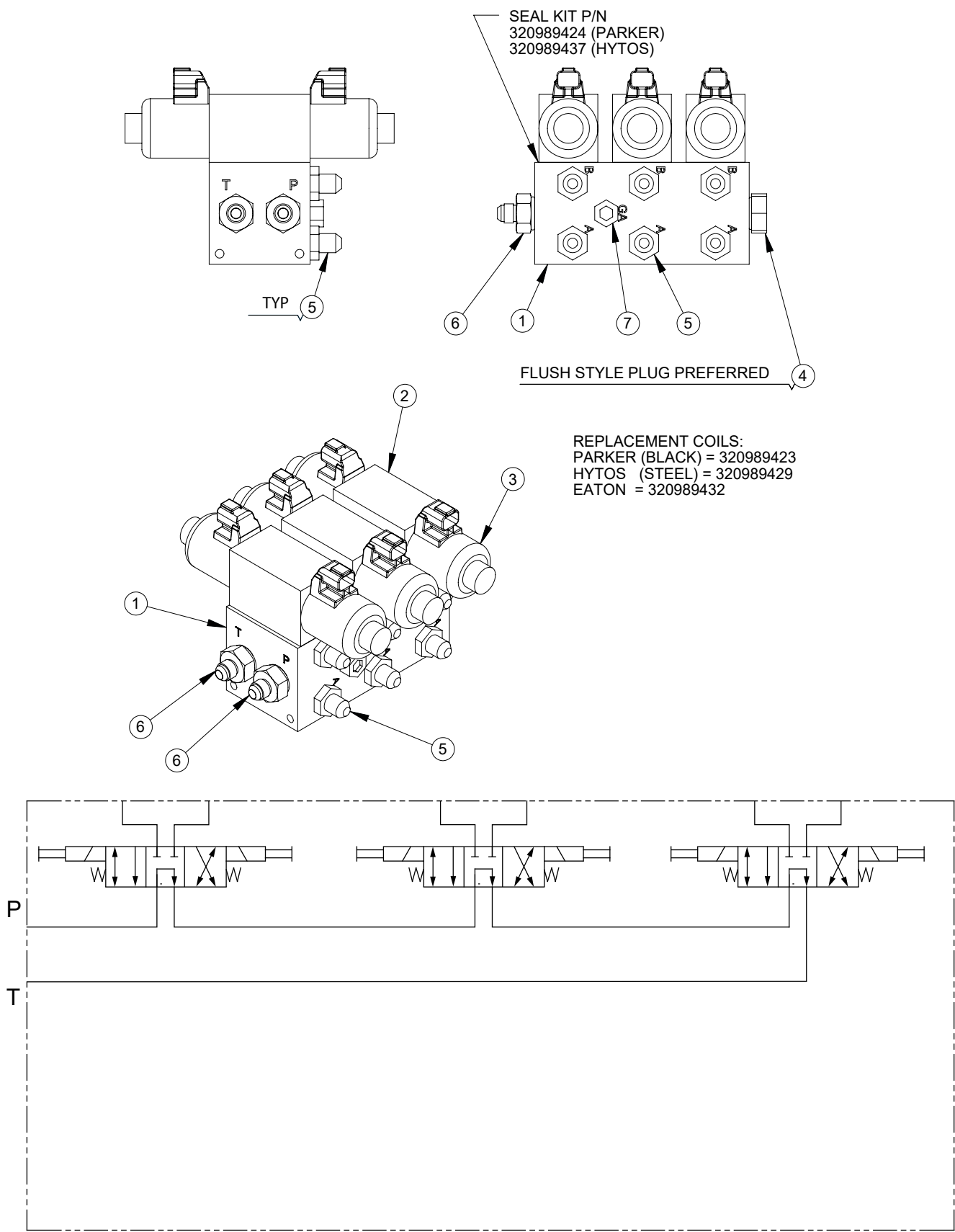
Pedestal Assembly - P/N 404181002

ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	404188101	PEDESTAL WELDMNT, 4004EH
2	1	404193000	BASE WLDMNT, 4004
3	1	320845000	CYLINDER, LIFT
4	1	320879000	SPACER ROTATION
5	1	320858000	BEARING, SPHERICAL 1.00 IDv
6	1	113003000	HOIST, DCDG-200R, W/ FRAME, ELECTRIC
7	1	404195000	UPPER TWECO BRACKET WLDMT, 4004
8	1	320824000	PIN, LIFT CYLINDER
9	1	404187000	SPRING PLATE, GROUND BRUSH, 4004
10	1	404202000	COVER, RELAY PANEL, 4004
11	1	360678000	PIN, 3/16 COTTERLESS RING
12	3	404214000	SPACER, HYD TANK
13	2	239300000	ZERK, GREASE
14	1	404213000	SEAL, 2.50 OD X 1.5 ID
15	1	404028000	RETAINING RING, SNAP RING
16	1	340602000	KEY, 3/4 SQ X 1
17	1	330483000	SPACER
18	1	366440000	ROTATION MOTOR
19	1	320878000	ROTATION BEARING
20	1	404016000	WORM GEAR
21	1	404015000	WORM SHAFT
22	1	645000000	TWECO, MALE MODIFIED
23	1	600318100	CABLE ASSY, 6 AWG, 24" WIRE LGTH, ø3/8 TMNL, ø5/16 TMNL
24	1	660116000	CABLE ASSY, 6 AWG, 16 1/4" WIRE LGTH, ø3/8 TMNL, ø5/16 TMNL
25	1	404194000	PRESSURE SWITCH, NC, 3200 PSI, 4004
26	1	404197001	RELAY PANEL ASSY, 4004EH
27	1	680155100	KIT, ELECTRICAL, 4004EH
28	4	330252000	SCREW HX HD 5/16-18 UNC X 3/4 LG GR5
29	4	206010000	WASHER SP LK 5/16
30	23	239020000	WASHER FL 5/8 HARDENED
31	23	121980000	SCREW HX HD 5/8-11 UNC X 1 3/4 LG GR8
32	8	330372000	NUT HX 3/8-16UNC
33	6	116030000	SCREW HX HD 1/2-13 UNC X 1 3/4 LG
34	8	177010000	NUT HX 1/2-13 UNC
35	4	216000000	WASHER FL 1/2
36	1	202000000	WASHER SP LK 1/4
37	1	550000000	SCREW HX HD 1/4-20 UNC X 3/4 LG
38	11	211000000	WASHER SP LK 3/8
39	6	330371000	SCREW HX HD 3/8-16 UNC X 1 LG GR8
40	1	190000000	NUT HX NYLK 7/8-14 UNF

Pedestal Assembly - P/N 404181002

ITEM NO.	QTY	PART NO.	DESCRIPTION
41	3	360493000	SCREW HX WHIZ-LK 1/4-20 UNC X 1/2 LG
42	2	910900000	SCREW HX HD 3/8-16 UNC X 1 1/2 LG
43	4	215000000	WASHER, SP LK 1/2
44	3	212000000	WASHER FL 3/8
45	3	404229000	SCR HX HD 3/8-16 UNC X 2 1/2LG, ZINC PL, GR 5
46	2	116080000	SCREW HX HD 1/2-13 UNC X 2 LG
47	1	404198000	SCREW HX HD 3/8-16 UNC X 1 1/2 LG, BRONZE
48	1	736272000	NUTSERT 1/4-20 UNC X .027-.165 GRIP
49	4	736274000	NUTSERT 3/8-16 UNC X .027-.15 GRIP
50	2	812037018	HOSE ASSEMBLY, -6 JIC 90/-4 HOSE
51	1	812037031	HOSE ASSY, -6 JICF/ -6 90 DEG ELL, -4 HOSE x 31" LG
52	1	812037027	HOSE ASSY, -6 JICF/ -6 90 DEG ELL, -4 HOSE x 27" LG
53	2	812209028	HOSE ASSY, -6 HOSE, -6 JICF / -6 JICF 90DEG SHORT, 28" LONG
54	3	200876000	FITTING 6 SAE/6 JIC STRAIGHT
55	2	490198000	FITTING 10 SAE (M)/6JIC ELBOW 90
56	2	812026016	HOSE ASSY -4 HOSE -6 FEMALE JIC
57	1	320988275	KIT, HYDRAULIC, 3203 PRX/ 4004
58	1	320989420	VALVE ASSY, 3 SPOOL, NON-PROP., 12 VOLT
59	1	404188008	UPPER VALVE BRACKET, 4004 EH
60	1	366688000	COVER, REAR
61	1	320989203	LOWER VALVE BRACKET, 3203H
62	1	320991307	POWER UNIT, NEXSTAR 3203/4004 EH
63	16	374085000	NYLON HOSE SLEEVE
64	1	320988261	VALVE, FLOW REGULATOR, IN-LINE
65	1	330478000	BEARING HOUSING ASSY

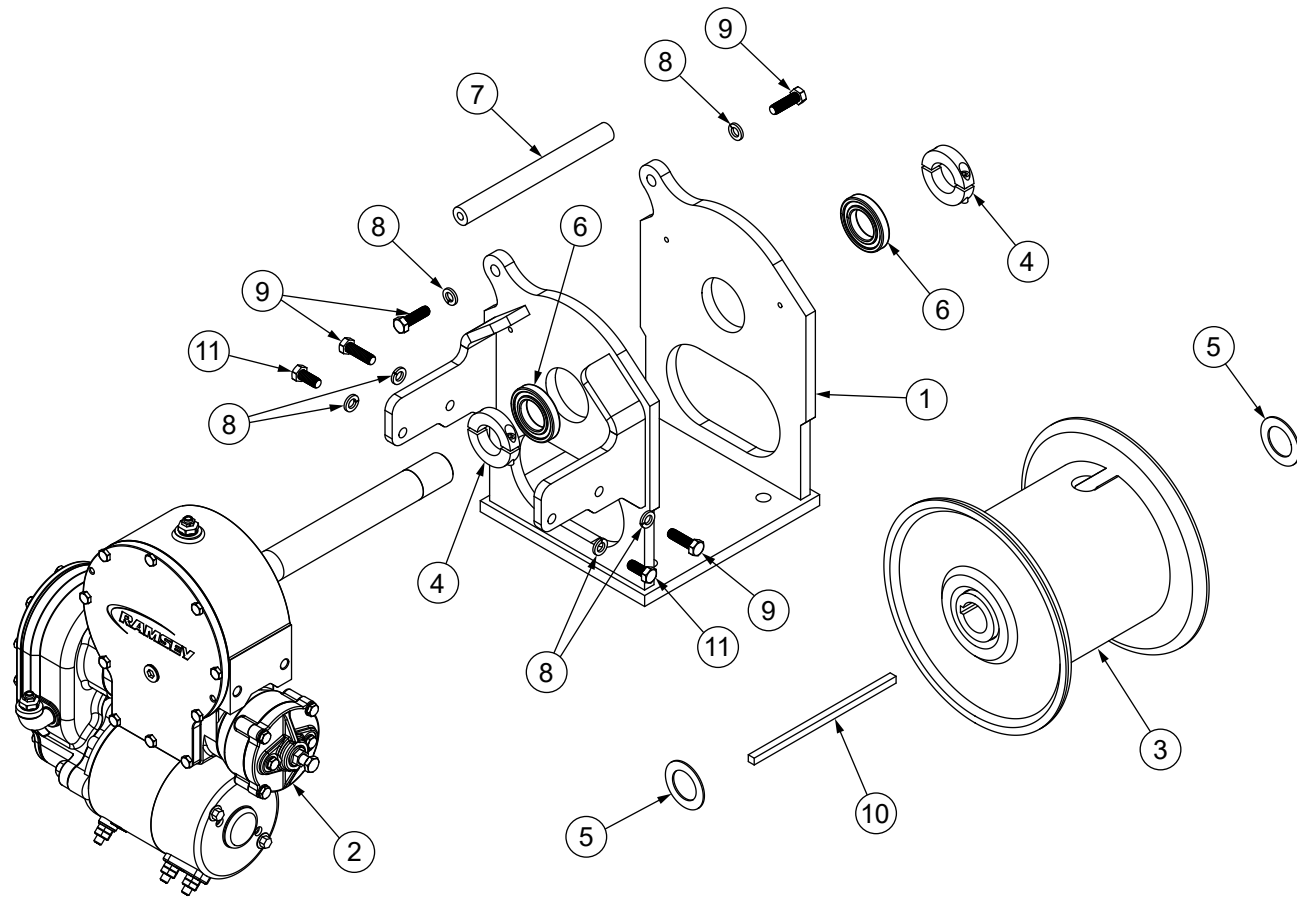
Hydraulic Valve Bank - P/N 320989420



Hydraulic Valve Bank - P/N 320989420

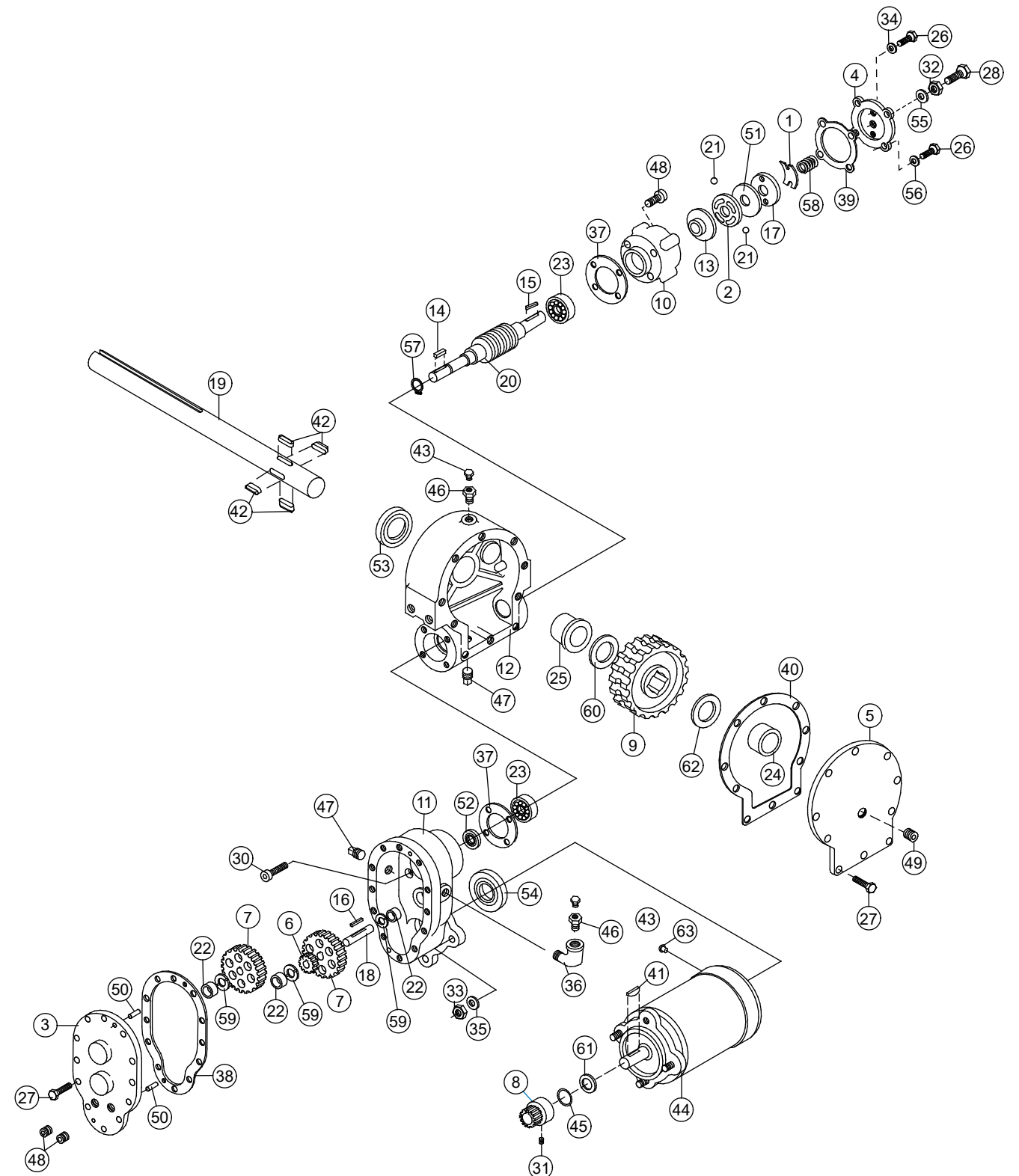
ITEM NO.	EATON QTY.	HYTOS QTY.	PARKER QTY.	AUTO CRANE PART NO.	DESCRIPTION
	1	-	-	320989430	MANIFOLD BLOCK
1	-	1	1	320989430	MANIFOLD BLOCK, DO3
	-	-	1	320989422	VALVE, DO3 STACK TYPE, PARKER
	-	3	3	320989428	VALVE, DO3 STACK TYPE, HYTOS
2	3	-	-	320989431	VALVE, DO3 STACK TYPE, EATON
	-	-	6	320989423	COIL, 12V-2.5A PARKER, FOR 320989420
	-	6	-	320989429	COIL, 12V-2.7A HYTOS, FOR 320989420
3	6	-	-	320989432	COIL, 12V-2.5A EATON, FOR 320989420
4	2	2	2	330072000	PLUG, #10 SAE
5	6	6	6	202756000	FITTING 6-8 STRAIGHT
6	2	2	2	202755000	FITTING, -10 SAE/-6 JIC, STR
7	1	1	1	751034000	PLUG, -6ORB

Hoist Assembly - P/N 113003



ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	242177000	HOIST FRAME
2	1	297036000	GEAR HSG/SPUR GEAR HSG/MTR
3	1	436037000	DRUM WELDMENT
4	2	479016000	COLLAR, SPLIT 1.25" I.D.
5	2	518063000	BEARING, BRONZE
6	2	402128000	BEARING 1.25" I.D.
7	1	448100000	TIE BAR, HOIST ASSEMBLY
8	6	418177000	WASHER SPLK 3/8"
9	4	414316000	SCW HX 3/8" UNC X 1-1/4" GR8
10	1	342199000	KEY, 5/16" X 7-1/2"
11	2	414294000	SCREW, 3/8"-16 NC X 7/8" LG

Hoist Assembly - P/N 297036



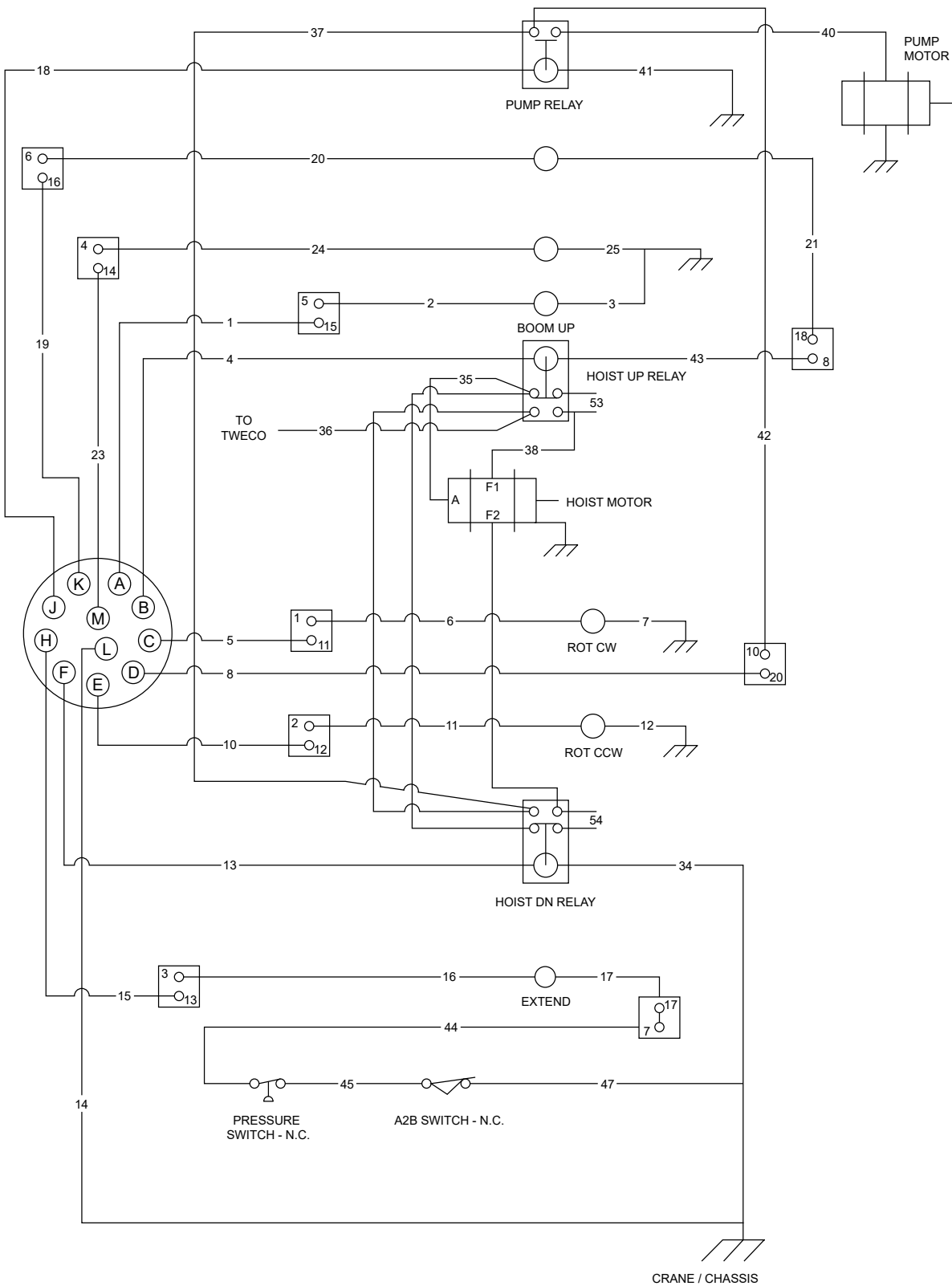
Hoist Assembly - P/N 297036

ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	306034000	SPRING FLAT
2	1	314008000	PLATE CAM
3	1	324106000	COVER SPUR GEAR HOUSING
4	1	328128000	COVER BRAKE
5	1	328134000	COVER WORM GEAR HOUSING
6	1	334001000	IDLER GEAR
7	2	334003000	SPUR GEAR
8	1	334129000	PINION GEAR
9	1	334165000	GEAR WORM RH
10	1	338007000	HOUSING BRAKE
11	1	338203000	SPUR GEAR HOUSING
12	1	338273000	GEAR HOUSING
13	1	340002000	HUB BRAKE
14	1	342023000	KEY SQ END
15	1	342027000	KEY RD END
16	1	342033000	KEY SQ END
17	1	352022000	PLATE RETAINER
18	1	356901000	SHAFT SPUR
19	1	357145000	SHAFT OUTPUT
20	1	368200000	WORM RH 30:1
21	2	400003000	BALL
22	3	402001000	BEARING NEEDLE
23	2	402002000	BEARING BALL
24	1	412044000	BUSHING COVER
25	1	412045000	BUSHING HOUSING
26	6	414021000	SCREW HX HD 1/4-20 UNC X 1 LG GR5
27	22	414038000	SCREW HX HD 1/4-20 UNC X 3/4 LG GR5
28	1	414224000	SCREW HX HD 3/8-16 UNC X 1 1/2 LG GR5
29	4	414821000	SCREW SOC BTN HD 1/4-20 UNC X 7/8 LG
30	4	414845000	SCREW SOC HD 1/4-20 UNC X 1 LG
31	1	416029000	SCREW SET
32	1	418036000	NUT JAM 3/8-16 UNC
33	3	418040000	NUT HX 3/8-24 UNF
34	2	418154000	WASHER 1/4 FLAT ALUM.
35	3	418177000	WASHER LK
36	1	432011000	ELBOW 90 DEG
37	2	442184000	GASKET
38	1	442185000	GASKET
39	1	442189000	GASKET
40	1	442205000	GASKET

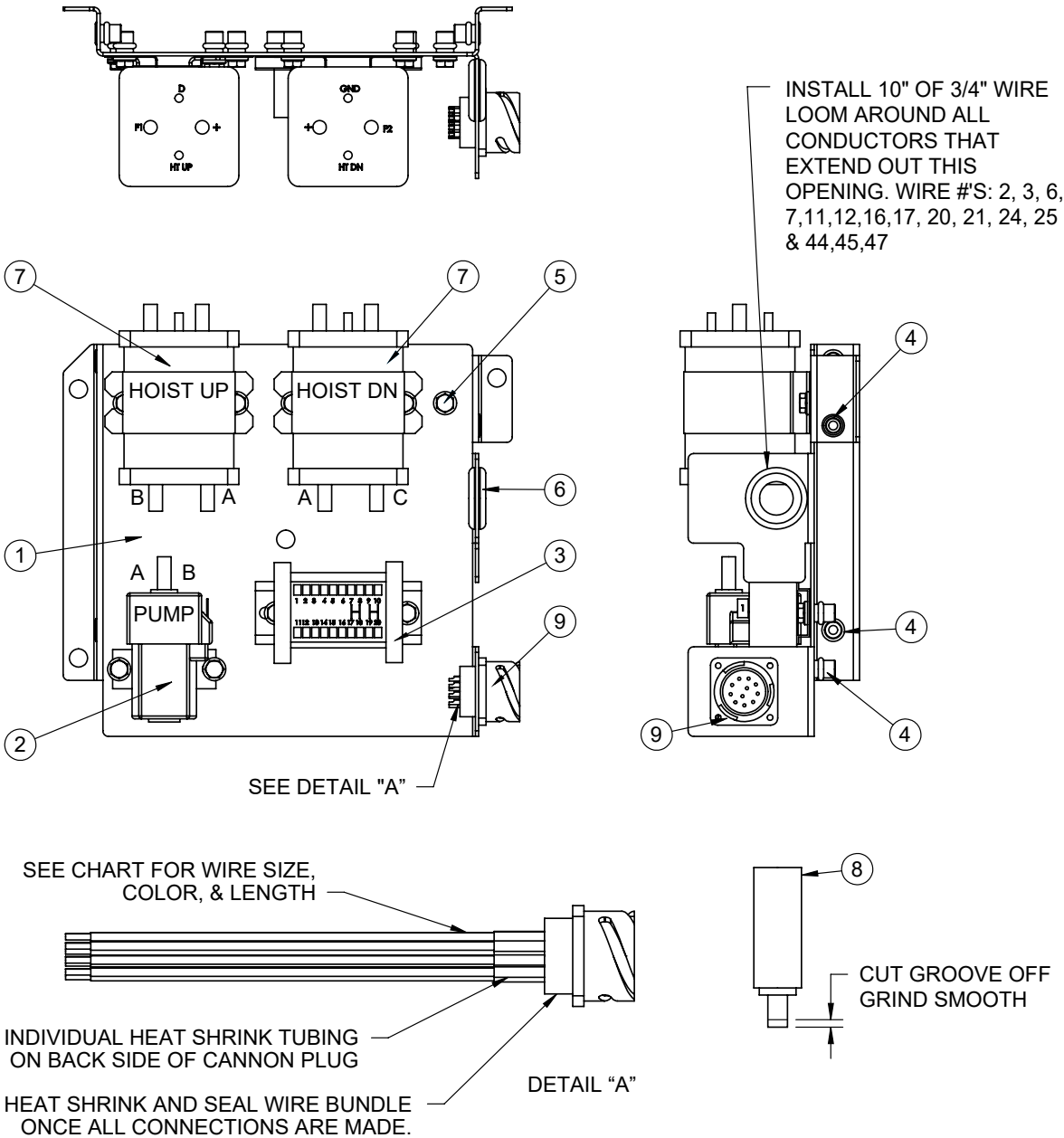
Hoist Assembly - P/N 297036

ITEM NO.	QTY	PART NO.	DESCRIPTION
41	1	450001000	KEY WOODRUFF
42	4	450016000	KEY BARTH
43	2	456008000	RELIEF FITTING
44	1	458108000	MOTOR 12V
45	1	462015000	O-RING
46	2	468002000	REDUCER
47	2	468011000	PIPE PLUG SQ HD
48	2	468017000	PIPE PLUG SOC HD
49	1	468018000	PIPE PLUG SOC HD
50	2	470001000	PIN
51	1	474001000	PLATE THRUST
52	1	486009000	OIL SEAL
53	1	486017000	OIL SEAL
54	1	486023000	OIL SEAL
55	1	486069000	THREAD SEAL
56	4	486070000	THREAD SEAL
57	1	490003000	SNAP RING
58	1	494007000	SPRING
59	3	518002000	WASHER THRUST
60	1	518015000	WASHER THRUST
61	1	518018000	FIBER WASHER
62	1	518040000	WASHER THRUST
63	1	480015000	RIVET PLASTIC

Relay Panel - P/N 404197001

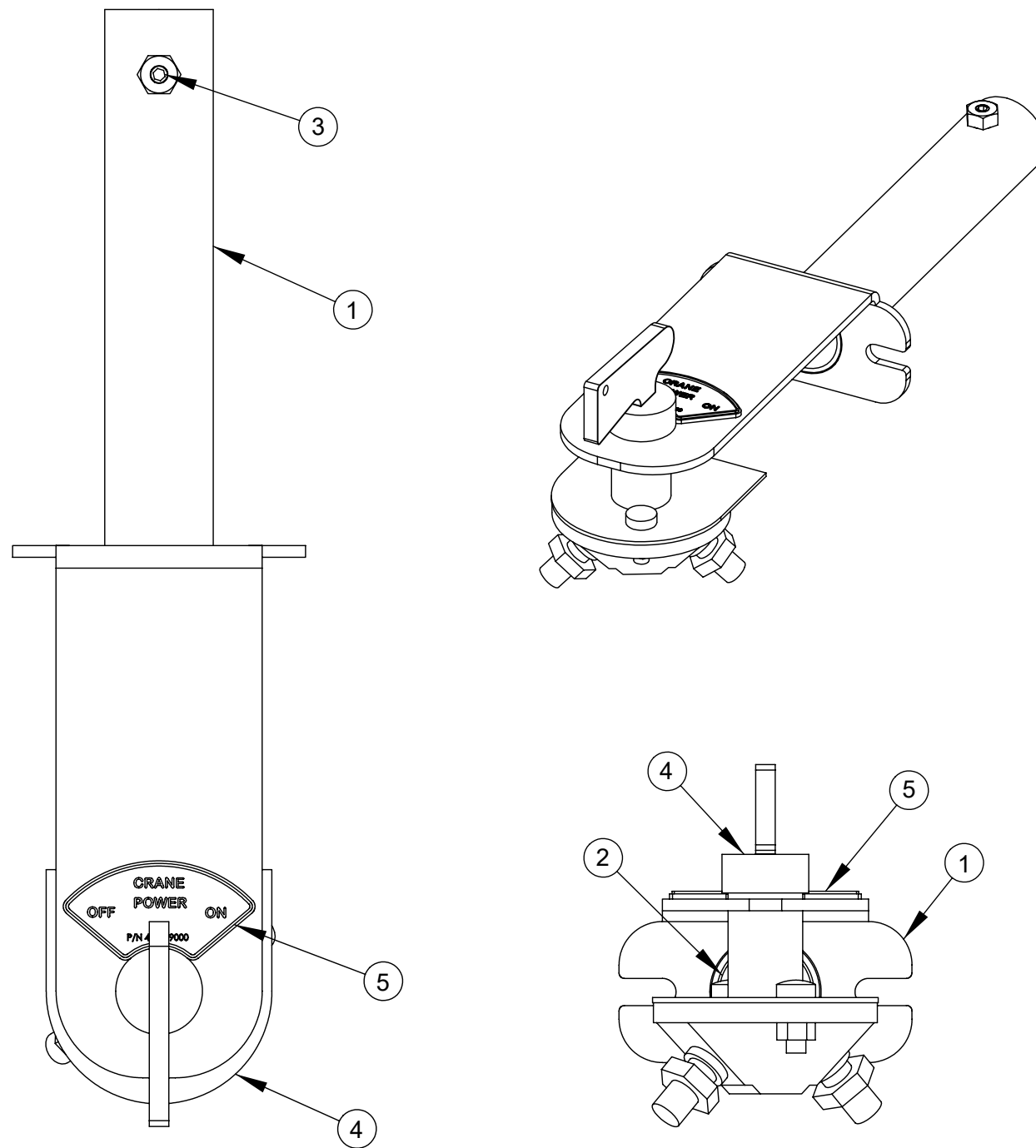


Relay Panel - P/N 404197001



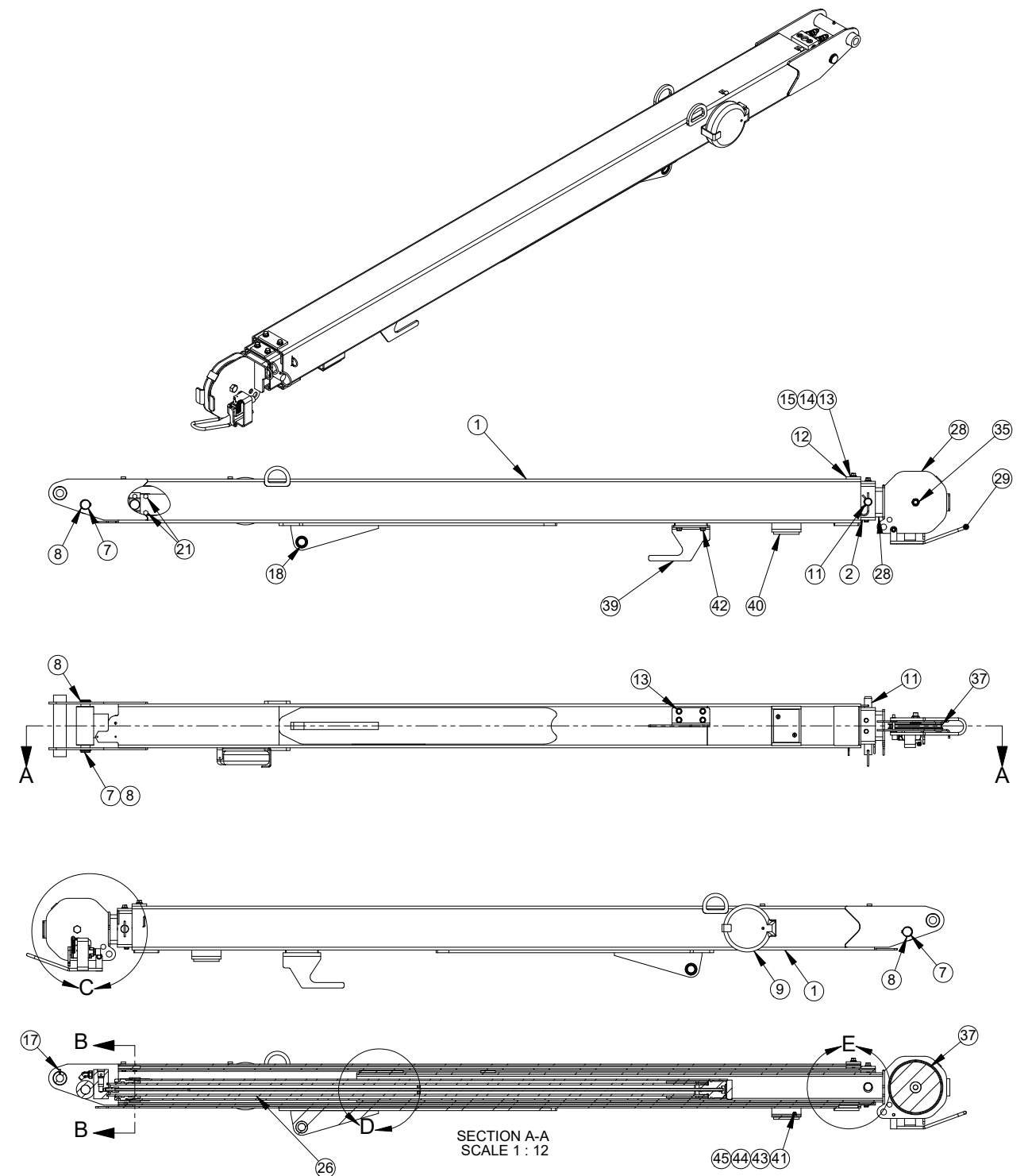
ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	404203001	BRACKET, RELAY PANEL, 4004
2	1	320584000	RELAY, POWER UNIT
3	1	320803000	TERMINAL STRIP 10
4	12	736272000	NUTSERT 1/4-20UNC X .027-.165 GRIP
5	10	360493000	SCREW HX WHIZ-LK 1/4-20 UNC X 1/2 LG
6	1	371024000	GROMET 3/4" I.D.
7	2	404167000	SOLENOID, SEALED
8	1	645000000	TWECO, MALE MODIFIED
9	1	320562000	RECEPTACLE, 11 PIN BAYONET

TWECO With Switch Mount - P/N 404208000

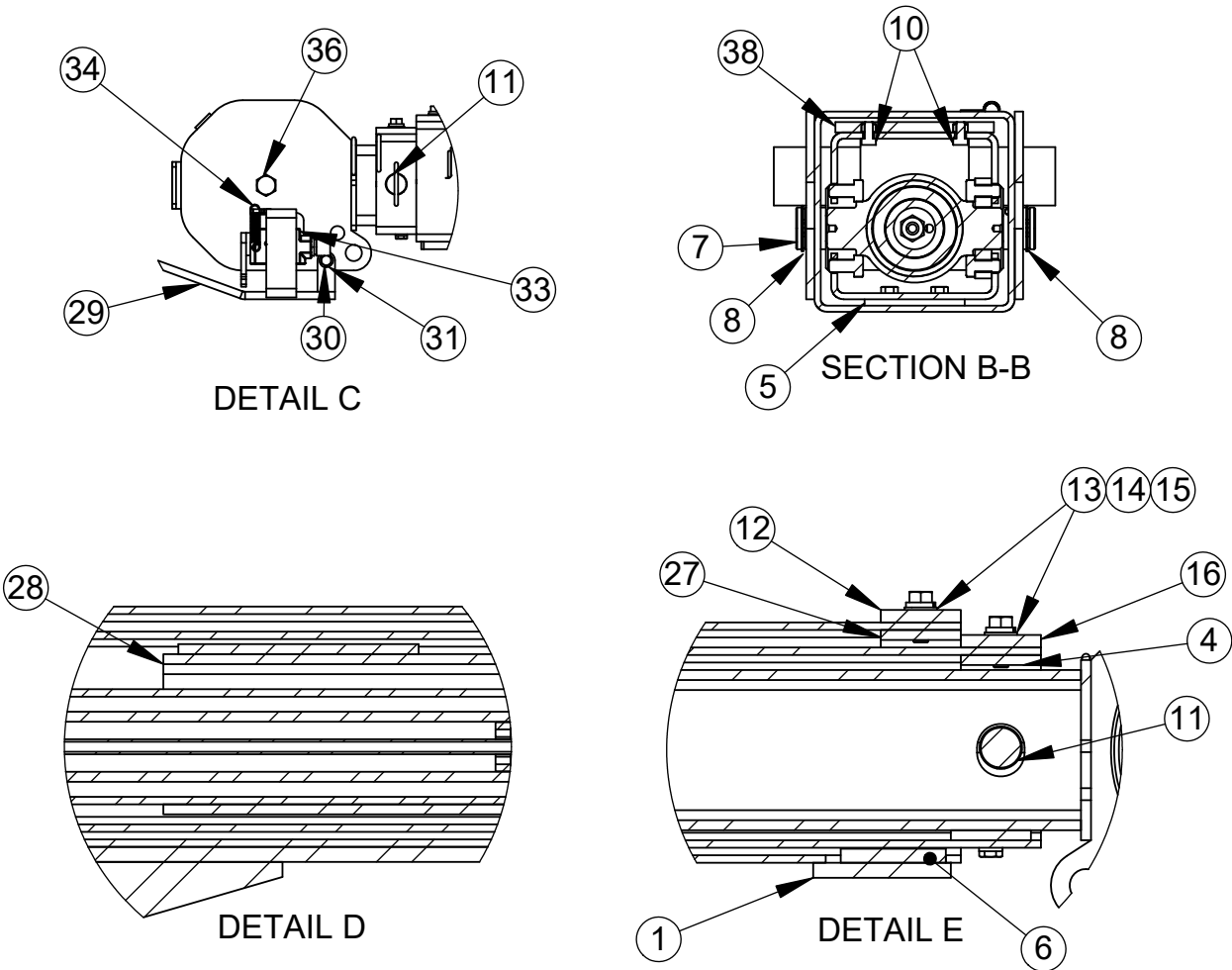


ITEM NO.	QTY	PART NO.	DESCRIPTION
1	1	404217000	LOWER TWECO WDLMT WITH SWITCH MOUNT
2	1	404224000	CABLE ASSY 11 IN, TWECO TO TERMINAL
3	1	290000000	SCREW SET 0.25-20 X 0.25
4	1	404216000	MASTER SWITCH
5	1	404219000	DECAL, CRANE POWER

Boom Single Sheave - P/N 404240100



Boom Single Sheave - P/N 404240100



Boom Single Sheave - P/N 404240100

ITEM NO.	QTY	PART NUMBER	DESCRIPTION
1	1	404240002	LOWER BOOM WELDMENT, EHC-4 (20FT)
2	1	404240004	MID BOOM WELDMENT, [n]4004EH (20FT)
3	1	366184000	RETAINER, EXTENSION CYLINDER
4	1	366112000	STOP UPPER BOOM
5	1	480120000	KB PAD
6	1	360791000	WEAR PAD 4.5 X 2.63 X .35
7	1	404204000	PIN 1-1/4 DIA X 7.163 LG, 4004
8	2	480029000	RING RETAINING
9	1	404205000	CORD REEL ASSY
10	6	005406000	SCREW HX HD 1/4-28UNF X 1/2 LG
11	1	366190000	PIN ASSY W/LANYARD
12	1	366201000	WEAR PAD 3.75 X 2.00 X .313
13	8	021200000	WASHER FL 3/8
14	8	021100000	WASHER SP LK 3/8
15	4	008800000	SCREW HX HD 3/8-24UNF X 1 LG
16	1	366202000	PAD, BOOM TOP
17	1	239000000	ZERK DRIVE GR
18	1	320858000	BEARING, SPHERICAL 1.00 ID
19	2	020600000	WASHER 5/16 LOCK SS
20	2	007808000	SCREW 5/16-24UNF X 1/2 LG
21	12	008400000	SCREW HX HD 3/8-16UNC X 3/4 LG GR 5
22	2	200876000	FITTING STR 6 SAE/6 JIC
23	2	330647000	FITTING -6JIC SWIVEL NUT 45 DEG ELBOW
24	1	366199000	PAD BOOM
25	1	642918000	CORD CONNECTOR
26	1	404240010	CYLINDER, EXTENSION, 72 INCH STROKE
27	1	366183000	STOP CENTER BOOM
28	1	404186010	UPPER BOOM WLDMT 4004, SINGLE SHEAVE
29	1	320871000	BAIL WELDMENT
30	1	811029000	SCREW HX HD 5/16-18UNC X 2 1/2 LG
31	4	209010000	WASHER FL 5/16
32	1	016801000	NUT HX NYLK 5/16-18UNC CP
33	1	646900000	SWITCH, ANTI-TWO BLOCK
34	1	366678000	SPRING, EXTENSION
35	1	018200000	NUT HX NY LK 5/8-11UNC

ITEM NO.	QTY	PART NUMBER	DESCRIPTION
36	1	366393000	SCREW HX HD 5/8-11UNC X 2 1/2 LG GR8
37	1	320883001	SHEAVE ASSEMBLY, 4004
38	1	320988156	BOOM PAD WITH NUTS, 4.75 X 3 X .313, 3203
39	1	479200154	OPEN LOAD HOOK, BOLT-ON
40	1	479200152	WEAR PAD, TRAVELING BLOCK
41	2	016100001	SCREW, FLAT HEAD, 1/4-28 X 1, ZINC PLATED, GR 5
42	4	479200169	3/8-24 HHCS, 3/4 LG, ZINC PLATED, GR 5
43	2	020300000	WASHER FL 1/4
44	2	020200000	WASHER SP LK 1/4
45	2	016100000	NUT, 1/4-28, ZINC PLATED

Note: Not all boom configurations are shown in this manual.



P.O. Box 580697 Phone: (918) 438-2760
4707 N. MIngo Rd. Tulsa, OK 74158-0697

LIMITED WARRANTY
1 YEAR PURCHASED REPLACEMENT PARTS

Auto Crane will warranty to the consumer for a period of (1) year from the date that a new Auto Crane replacement part was purchased from an authorized Auto Crane distributor. Each new Auto Crane part they sell will be free under normal use and service from defects in material and workmanship. Date of purchase will be honored as the date indicated on the Bill of Sale to the consumer.

The obligation of Auto Crane under this warranty does not apply to parts replaced under the limited warranty for a new Auto Crane product. The warranty for parts replaced under the limited warranty of a new Auto Crane product expires when the warranty for that product expires.

The obligation of Auto Crane under this warranty is limited to the replacement or repair of purchased replacement parts that appear to the manufacturer to be defective after review of documentation (Auto Crane Warranty Claim Form, photos, data etc.) provided by the Auto Crane distributor and/or inspection of parts returned to Auto Crane. This warranty does not obligate Auto Crane to bear labor costs to replace the defective parts or travel time charges in connection with the replacement or repair of defective parts. Responsibility for customer's claims arising from misapplication, abuse, misuse or alteration of equipment or parts lies with the distributor or user and no warranty obligation is assumed in these circumstances by Auto Crane.

Auto Crane will in no event be liable for any consequential damages or contingent liabilities arising out of the failure of any Auto Crane product or parts to operate properly

Auto Crane makes no warranty in respect to parts for component accessories, it being subject to the warranties of their respective manufacturers.

If field service, at the request of the distributor, is rendered and fault is found not to be with Auto Crane's product, the distributor shall pay the time and expense of the field representative.

Claims for service labor or other expenses that have incurred by the buyer without approval or authorization or Auto Crane will not be accepted

When applying for warranty claims may be handled by contacting your nearest authorized Auto Crane **Distributor. All claims are to be filed in writing on an Auto Crane Warranty Claim Form.**

Limited Parts Warranty 1 YearEffective June 15, 2010



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4707 N. Mingo Rd. Tulsa, OK 74158-0697

**LIMITED WARRANTY
2 YEAR PARTS AND LABOR**

Auto Crane will warranty to the consumer for a period of (2) years parts and labor from the date of purchase. Each new Auto Crane unit they sell will be free under normal use and service from defects in material and workmanship. Date of purchase will be honored as the date indicated on the Bill of Sale, which must accompany the Warranty Registration and be on file with Auto Crane. Absent a valid Warranty Registration and appropriate documentation, the original date of manufacture, as indicated by the serial number on the product, will be used to determine the effective date of the 2 year warranty.

The obligation of Auto Crane under this warranty is limited to the replacement or repair of parts that appear to the manufacturer after review and/or inspection to be defective and paid flat rate labor for replacing defective parts. This warranty does not obligate Auto Crane to bear the travel time charges in connection with the replacement or repair of defective parts. Responsibility for customer's claims arising from misapplication, abuse, misuse or alteration of equipment or parts lies with the distributor or user and no warranty obligation is assumed in these circumstances by Auto Crane.

Auto Crane will in no event be liable for any consequential damages or contingent liabilities arising out of the failure of any Auto Crane Product or parts to operate properly.

Auto Crane makes no warranty in respect to component accessories, it being subject to the warranties of their respective manufacturers.

If field service, at the request of the distributor, is rendered and fault is found not to be with Auto Crane's product, the distributor shall pay the time and expense of the field representative.

Claims for service labor or other expenses that have incurred by the buyer without approval or authorization or Auto Crane will not be accepted.

When applying for warranty, claims may be handled by contacting your nearest authorized Auto Crane Distributor. All claims are to be filed in writing on an Auto Crane Warranty Claim Form.

AUTO CRANE COMPANY IS UNDER NO OBLIGATION TO EXTEND THIS WARRANTY TO ANY CUSTOMER FOR WHICH AN AUTO CRANE DELIVERY REPORT FORM HAS NOT BEEN COMPLETED AND ON FILE WITH AUTO CRANE COMPANY

Limited Warranty 2 Years

Effective September 2, 2003

